BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : CUM Edition : 02.94 Replaces Test oil : ISO-4113 Combination no. : 0 402 736 838 Injection pump Pump designation : PES6P120A120RS7275 EP type number : 0 412 726 886 Governor : RQV400...1250PA964 Governor design. -16K : 0 421 815 334 Governer no. Customer—spec. information Customer : C.D.C. Engine : 6BTA-A 1st version kW : 119.0 Rated speed : 2500 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 105...125 Test nozzle holder assembly : 1 688 901 103 Opening pressure, bar : 207...210 Test lines : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 3.55...3.65 : (3.50...3.70) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance $+ - ^{\circ} : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1250Rack travel in mm: 13.40...13.50 Del.quantity cm3/: 15.3...15.5 100 s: (15.0...15.8) Spread cm3 : 0.8100 s: (1.2) rpm : 400 2nd speed Rack travel in mm: 6.0...6.4 Del.quantity cm3/: 1.4...2.0 100 s: (1.2...2.2) Spread cm3 : 0.4100 s: (0.8) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL rpm : 400 1st speed travel mm : 1.40...1.60 2nd speed 500 rpm 2.30...2.70 travel mm 3rd speed : 800 rpm : 4.80...5.20 travel mm 4th speed : 1250 rpm travel mm : 6.90...7.10 : 1500 5th speed rpm : 8.30...8.70 travel mm FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1250 Aneroid pressure h: 1200 Del.quantity : 152.5...157.5) : 8.00 Spread cm3 1000 : (12.00)

RATED SPEED 1st version Control lever

position degrees: 110...122

Testina:

1st rack travel in: 12.40 rpm : 1310...1340 Speed 2nd rack travel in: 4.00 rpm : 1560...1570 Speed

4th rack travel in: 1675

rpm : 0.00...1.00Speed

LOW IDLE 1 Control Lever

position degrees: 65...77 Setting point w/out bumper spring

rpm : 400 Rack travel in mm: 6.2

Testing:

Speed rpm : 300 Minimum rack trave: 7.70 : 400 riom

Rack travel in mm : 6.00...6.40

CONSTANT REGULATION

rpm : 325...519 Speed

TORQUE CONTROL

Dimension a mm :?

Torque control curve - 1st version

1st speed rpm : 1250
Rack travel in m: 13.40...13.50
2nd speed rpm : 900

Rack travel in m: 12.00...12.40

Aneroid/Altitude Compensator Test

1st version Setting

Speed rpm : 1250 Pressure hPa : 1200 Rack travel mm : 13.40...13.50

Measurement

1/min: 1250 Speed

1st pressure hPa : -

Rack travel in m: 10.30...10.70

2nd pressure hPa : 265

Rack travel in m: 11.10...11.20 3rd pressure hPa : 440

Rack travel in m: 12.70...13.10

START CUT-OUT

Speed

1/min: 250 (260)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200 Speed rpm : 900

Del.quantity cm3/: 130.5...136.5 1000 s: (127.5...139.5) Spread cm3: 8.00 1000 s: (12.0)

Aneroid pressure h: rpm : 1250 Speed

Del.quantity cm3/: 108.5...112.5

1000 s: (106.5...114.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 12.40

Speed rpm : 1310...1340

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 135.0...175.0 1000 s: (130.0...180.0)

Rack travel in mm : 12.00...13.00

LOW IDLE

Speed rpm : 450

Rack travel in mm : 6.00...6.40 Del.quantity cm3/: 14.0...20.0 1000 s: (12.0...22.0)

Spread cm3 : 4.00

1000 s: (8.00)

Remarks:

: FB-BLOCK. 6.25° NACH

: /AFTER FB ZYL. 1

: C.D.C. # 392 1918

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : CUM Test sheet Edition : 02.94 Replaces Test oil : ISO-4113 : 0 402 736 838 Combination no. Injection pump Pump designation : PES6P12DA12ORS7275 EP type number : 0 412 726 886 Governor Governor design. : RQV400...1250PA964 -19K: 0 421 815 342 Governer no. Customer-spec. information Customer : C.D.C. Engine : 6BTA-A 1st version kW : 130.5 : 2500 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 105...125 Test nozzle holder : 1 688 901 103 assembly Opening : 207...210 pressure, bar Test lines : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

: 3.55...3.65 Prestroke mm : (3.50...3.70) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasing : C-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1250 Rack travel in mm : 13.40...13.50 Del.quantity cm3/: 15.9...16.1 100 s: (15.6...16.4) Spread cm3 : 0.8100 s: (1.2) rpm : 400 2nd speed Rack travel in mm: 5.9...6.3 Del.quantity cm3/: 1.4...2.0 100 s: (1.2...2.2) cm3 : 0.4Spread 100 s: (0.8) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL rpm : 400 1st speed : 1.30...1.50 travel mm : 500 2nd speed rpm 2.30...2.70 travel mm 3rd speed : 800 rpm : 4.80...5.20 travel mm : 1250 4th speed rpm travel mm : 6.90...7.10 5th speed : 1500 man travel mm : 8.30...8.70 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1250 Aneroid pressure h: 1200 : 159.5...161.5 Del.quantity 1000 : (156.5...164.5) Spread : 8.00 cm3 : (12.00) 1000

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

RATED SPEED

1st version

control lever

position degrees: 111...123

Testing:

1st rack travel in: 12.40

rpm : 1300...1330 Speed

2nd rack travel in: 4.00

rom : 1560...1570 Speed

4th rack travel in: 1675

rpm : 0.00...1.00Speed

LOW IDLE 1

Control lever

position degrees: 65...77 Setting point w/out bumper spring

rpm : 400

Rack travel in mm: 6.10

Testing:

rpm : 300 Speed Minimum rack trave: 7.40

Speed rpm : 400

Rack travel in mm : 5.90...6.30

CONSTANT REGULATION

rpm : 325...519 Speed

TORQUE CONTROL

Dimension a mm :?

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 13.40...13.50

2nd speed

nd speed rpm : 900 Rack travel in m: 12.00...12.20 rd speed rpm : 500

3rd speed

Rack travel in m: 11.30...11.70

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed : 1250 rom hPa : 1200 Pressure

Rack travel mm : 13.40...13.50

Measurement

1/min: 1250 Speed

1st pressure hPa : -

Rack travel in m: 10.20...10.60

2nd pressure hPa : 260

Rack travel in m: 11.30...11.40 3rd pressure hPa : 430

Rack travel in m: 12.80...13.20

START CUT-OUT

Speed

1/min: 250 (260)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

rpm : 900 Speed

Del.quantity cm3/: 135.0...141.0 1000 s: (132.0...144.0)

cm3 : 8.00

1000 s: (12.0)

Aneroid pressure h: -

Speed rpm : 1250 Del.quantity cm3/ : 110.0...114.0 1000 s: (108.0...116.0)

BREAKAWAY

Spread

1st version

1mm rack travel less than

full load rack tr: 12.40

rpm : 1300...1330 Speed

STARTING FUEL DELIVERY

rpm : 100 Speed

Del.quantity cm3/: 135.0...175.0 1000 s: (130.0...180.0)

Rack travel in mm: 13.00...14.00

LOW IDLE

rpm : 400 Speed

Rack travel in mm : 5.90...6.30 Del.quantity cm3/: 14.0...20.0 1000 s: (12.0...22.0)

cm3 : 4.00Spread

1000 s: (8.00)

Remarks:

: FB-BLOCK. 6.25° NACH

: /AFTER FB ZYL. 1

: C.D.C. # 392 1920

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : CUM : 02.94 Edition : 07.93 Replaces : ISO-4113 Test oil Combination no. : 0 402 736 844 Injection pump EP type number : 0 412 726 896 Governor Governor design. -21K : 0 421 815 354 Governer no. Customer-spec, information Customer : C.D.C. Engine : 6BTA-A 1st version kW : 171.0 Rated speed : 2500 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 2 417 413 086 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 90...110 Test nozzle holder : 1 688 901 103 assembly Opening pressure, bar : 207...210 Orifice plate diameter mm : 0,7 Test lines

Pump designation : PES6P120A120RS7287 : RQV400...1250PA964 : 1 680 750 015 Outside diameter x Wall thickness : 6.00x3.00x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values ___ A05

BEGINNING OF DELIVERY Test pressure, bar: 22...24 : 3.55...3.65 : (3.50...3.70) Prestroke mm Rack travel in mm : 10.00...13.00 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1150 Rack travel in mm : 15.00...15.10 Del.quantity cm3/: 19.9...20.1 100 s: (19.6...20.4) Spread cm3 : 0.8100 s: (1.2) 2nd speed rpm : 400.0Rack travel in mm : 6.1...6.5 Del.quantity cm3/ : 1.5...2.1 100 s: (1.3...2.3) cm3 : 0.4Spread 100 s: (0.8) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 400 : 1.40...1.60 travel mm rpm : 550 2nd speed : 3.10...3.50 travel mm 3rd speed rpm : 800 : 4.30...4.70 travel mm rpm : 1250 4th speed 7.00...7.20 travel mm rpm : 1500 5th speed : 9.20...9.60 travel mm FULL LOAD DELIV. AT FULL LOAD STOP 1st version

rpm : 1150

Del.quantity : 199.0...204.0)

Aneroid pressure h: 1200

Speed

cm3 Spread : 8.00 1000 : (12.00) RATED SPEED 1st version Control lever position degrees: 114.0...122.0 Testing: 1st rack travel in: 13.50 Speed rpm : 1310...1320 2nd rack travel in: 4.00 rpm : 1460...1490 Speed 4th rack travel in: 1550 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 68.0...76.0 Testing: Speed rpm : 300 Minimum rack trave: 7.80 rpm : 400 Rack travel in mm : 6.10...6.50 CONSTANT REGULATION rpm : 325...521 Speed TORQUE CONTROL Dimension a mm :? Torque control curve - 1st version rpm : 1150 1st speed Rack travel in m: 15.00...15.10 nd speed rpm : 900 2nd speed Rack travel in m: 14.30...14.50 rpm : 600 3rd speed Rack travel in m: 13.20...13.60 4th speed rpm : 1250 Rack travel in m: 14.50...14.70 Aneroid/Altitude Compensator Test 1st version Setting Speed : 1150 rpm hPa : 1200 Pressure Rack travel mm : 15.00...15.10 Measurement

1/min: 1150 Speed 1st pressure hPa : -Rack travel in m: 10.10...10.50 2nd pressure hPa : 355 Rack travel in m: 11.30...11.40 3rd pressure hPa : 645

Rack travel in m: 13.30...13.70 START CUT-OUT Speed 1/min: 290 (300) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 Speed rpm : 900 Del.quantity cm3/: 183.0...189.0 1000 s: (180.0...192.0) Spread cm3 : 8.001000 s: (12.0) Aneroid pressure h: -Speed rpm : 1150 Del.quantity cm3/ : 94.5...98.5 1000 s: (92.5...100.5) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 13.50 Speed rpm : 1310...1320 STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 135.0...175.0 1000 s: (130.0...180.0) Rack travel in mm : 12.00...13.00 LOW IDLE rpm : 400 Speed Rack travel in mm : 6.10...6.50 Del.quantity cm3/: 15.0...21.0 1000 s: (13.0...23.0) cm3 : 4.00 Spread 1000 s: (8.00)

Remarks:

: C.D.C. # 3921925

Mark position of port-opening mark 6.25° before port opening cylinder 1 on clutch

BOSCH INJ. PUMP TEST SPECIFICATIONS : 3.55...3.65 : (3.50...3.70) Prestroke mm Rack travel in mm : 10.00...13.00 Firing order : 1-5-3-6-2-4 Note remarks Test sheet : CUM Edition : 02.94 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 402 736 846 Tolerance + - ° : 0.50 (0.75) Injection pump Time to cyl. no. : 1 Pump designation : PES6P120A120RS7287 EP type number : 0 412 726 896 BASIC SETTING Governor Governor design. : RQV400...1250PA1081K rpm: 1250 1st speed Governer no. : 0 421 815 360 Rack travel in mm : 13.80...13.90 Customer-spec. information Customer : C.D.C Del.quantity cm3/: 17.2...17.4 Engine : 6BTA-A 100 s: (16.9...17.7) 1st version kW : 156.0 Spread cm3 : 0.8: 2500 Rated speed 100 s: (1.2) TEST BENCH REQUIREMENTS 2nd speed rom : 400.0Test oil Rack travel in mm: 6.0...6.4 inlet temp. °C : 38...42 Del.quantity cm3/: 1.8...2.4 100 s: (1.6...2.6) Overflow valve cm3 : 0.4Spread : 2 417 413 086 100 s: (0.8) Inlet press., bar: 1.50 (B) Setting of injection pump with governor Overflow quantity min. 1/h: 90...110 GUIDE SLEEVE TRAVEL 1st speed rpm : 400 Test nozzle holder travel mm : 1.40...1.60 : 1 688 901 103 assembly 2nd speed : 550 rpm travel mm : 3.10...3.50 Opening 3rd speed : 800 rpm pressure, bar : 207...210 : 4.30...4.70 travel mm : 1250 4th speed rpm 7.00...7.20 travel mm Test lines : 1 680 750 015 5th speed : 1500 rpm : 9.20...9.60 travel mm Outside diameter x Wall thickness FULL LOAD DELIV. AT FULL LOAD STOP : 6.00x1.50x600 x Length mm 1st version (A) Injection pump setting values rpm : 1250 Speed Insp. values in parentheses Aneroid pressure h: 1200 : 172.5...174.5 Set equal delivery quant. Del.quantity per values ____ 1000 : (169.5...177.5) Spread cm3 : 8.00 BEGINNING OF DELIVERY 1000 : (12.00) Test pressure, bar: 22...24

RATED SPEED

1st version Control lever

position degrees: 112...124

Testina:

1st rack travel in: 12.80

Speed rpm : 1315...1345 2nd rack travel in: 4.00

rpm : 1480...1490 Speed

4th rack travel in: 1550

Speed rpm : 0.00...1.00

LOW IDLE 1 Control lever

position degrees: 66...78

Setting point w/out bumper spring

rpm : 400 Rack travel in mm: 6.2

Testing:

Speed : 300 rpm Minimum rack trave: 8.90 rpm : 400

Rack travel in mn: 6.00...6.40

CONSTANT REGULATION

rpm : 345...495 Speed

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 13.80...13.90

2nd speed rpm : 800

Rack travel in m: 12.10...12.30 3rd speed rpm : 500

Rack travel in m: 11.15...11.55

Aneroid/Altitude Compensator Test

1st version

Setting

: 1250 Speed חמיז Pressure hPa : 1200

Rack travel mm : 13.80...13.90

Measurement

1/min: 1250 Speed

1st pressure hPa : -

Rack travel in m: 9.50...9.90
2nd pressure hPa : 305
Rack travel in m: 10.80...10.90

3rd pressure hPa : 585

Rack travel in m: 12.60...13.00

START CUT-OUT

1/min: 290 (300) Speed

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

Speed rpm : 800 Del.quantity cm3/ : 138.5...144.5 1000 s: (135.5...147.5)

Spread cm3 : 8.00

1000 s: (12.0)

Speed rpm : 1250

Del.quantity cm3/: 89.0...93.0 1000 s: (87.0...95.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 12.80

Speed rpm : 1315...1345

STARTING FUEL DELIVERY

rpm : 100

Del.quantity cm3/: 135.0...175.0

1000 s: (130.0...180.0)

Rack travel in mm : 12.00...13.00

LOW IDLE

Speed rpm : 400

Rack travel in mm : 6.00...6.40

Del.quantity cm3/: 18.0...24.0

1000 s: (16.0...26.0) cm3 : 4.00 Spread

1000 s: (8.00)

Remarks:

: C.D.C. # 392 4903

Start-of-delivery mark 6° cam angle

after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM Edition : 02.94

Replaces

Test oil : ISO-4113

Combination no. : 0 402 736 847

Injection pump

Pump designation : PES6P120A120RS7287

EP type number

: 0 412 726 896

Governor

Governor design. : RQV400...1250PA964

-22K

: 0 421 815 366 Governer no.

Customer-spec. information Customer : C.D.C.

: 6BTA-A Engine

1st version kW : 156.0

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 2 417 413 086

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 90...110

Test nozzle holder

: 1 688 901 103 assembly

Opening

pressure, bar : 207...210

Test Lines : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY Test pressure, bar: 22...24

: 3.55...3.65 : (3.50...3.70) Prestroke mm

Rack travel in mm : 10.00...13.00

: 1-5- 3- 6- 2- 4 Firing order

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1150

Rack travel in mm : 14.30...14.40

Del.quantity cm3/: 17.7...17.9

100 s: (17.4...18.2)

Spread cm3 : 0.8

100 s: (1.2)

2nd speed rpm : 400

Rack travel in mm: 6.0...6.4 Del.quantity cm3/: 1.6...2.2

100 s: (1.4...2.4)

Spread cm3 : 0.4100 s: (0.8)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 400

: 1.40...1.60 travel mm

2nd speed rpm : 550

travel mm : 3.10...3.50

rpm : 800 3rd speed

: 4.30...4.70 travel mm

rpm : 1250 4th speed

travel mm : 7.00...7.20

5th speed man : 1500

: 9.20...9.60 travel mm

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150 Aneroid pressure h: 1200

Del.quantity : 177.0...179.0

1000 : (174.0...182.0)

: 8.00 Spread cm3

1000 : (12.00)

RATED SPEED

1st version Control lever

position degrees: 112...124

Testina:

1st rack travel in: 13.10

rpm : 1300...1330 Speed

2nd rack travel in: 4.00

rpm : 1475...1485 Speed

4th rack travel in: 1600

rpm : 0.00...1.00Speed

LOW IDLE 1 Control lever

position degrees: 66...78

Setting point w/out bumper spring

rpm : 400 Rack travel in mm: 6.20

Testing:

Speed man : 300 Minimum rack trave: 8.80 rpm : 400 Speed

Rack travel in mm : 6.00...6.40

CONSTANT REGULATION

rpm : 345...495 Speed

TORQUE CONTROL

Dimension a mm : ?

Torque control curve - 1st version

1st speed rpm : 1250

Rack travel in m: 14.10...14.30

2nd speed rpm : 1150

Rack travel in m: 14.30...14.40

3rd speed rpm : 800

Rack travel in m: 13.10...13.50

Aneroid/Altitude Compensator Test

1st version

Settina

Speed rpm : 1150 Pressure hPa : 1200

Rack travel mm : 14.30...14.40

Measurement

1/min: 1250 Speed

1st pressure hPa : -

Rack travel in m: 10.40...10.80

2nd pressure hPa : 425

Rack travel in m: 11.40...11.50

3rd pressure hPa : 685

Rack travel in m: 13.20...13.60

START CUT-OUT

Speed

1/min: 290 (300)

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

Speed : 800 rpm

Del.quantity cm3/: 159.0...165.0 1000 s: (156.0...168.0)

Spread cm3 : 8.00

1000 s: (12.0)

Aneroid pressure h: -

Speed rpm : 1150 Del.quantity cm3/ : 99.0...103.0 1000 s: (97.0...105.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.10

rpm : 1300...1330 Speed

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 135.0...175.0

1000 s: (130.0...180.0)

Rack travel in mm : 12.00...13.00

LOW IDLE

Speed : 400 rpm

Rack travel in mm : 6.00...6.40

Del.quantity cm3/: 16.5...22.5

1000 s: (14.5...24.5)

Spread cm3 : 4.00

1000 s: (8.00)

Remarks:

: FB-BLOCK. 6.25° NACH

: /AFTER FB ZYL. 1

: C.D.C. # 392 1923

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM Edition : 02.94

Replaces

: ISO-4113 Test oil

: 0 402 736 848 Combination no.

Injection pump

Pump designation : PES6P120A120RS7314

EP type number : 0 412 726 901

Governor

Governor design. : RQV400...1250PA964-2

: 0 421 815 374 Governer no.

Customer-spec. information Customer : CDC

Engine : 6BTA-A

1st version kW : 142.0 Rated speed : 2500

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 2 417 413 086

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 90...110

Test nozzle holder

: 1 688 901 103 assembly

Opening

pressure, bar : 207...210

Test Lines : 1 680 750 015

Outside diameter

x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 3.55...3.65

: (3.50...3.70)
Rack travel in mm : 10.00...13.00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50(0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1150

Rack travel in mm : 14.20...14.30

Del.quantity cm3/: 16.5...16.7

100 s: (16.2...17.0)

Spread cm3 : 0.8

100 s: (1.2)

2nd speed rpm : 400

Rack travel in mm: 6.9...7.3 Del.quantity cm3/: 1.5...2.1

100 s: (1.3...2.3) cm3 : 0.4

Spread 100 s: (0.8)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 400

: 1.80...2.00 travel mm

2nd speed rpm : 550

travel mm 3.30...3.70

rpm : 800 3rd speed

: 4.30...4.70 travel mm

: 1250 4th speed rpm

travel mm : 7.10...7.30

5th speed : 1500 rom

: 9.20...9.60 travel mm

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150

Aneroid pressure h: 1200

Aneroid Del.quantity 1000 : 165.5...167.5

: (162.5...170.5)

: 8.00 Spread cm3

1000 : (12.00)

RATED SPEED 1st version Control lever position degrees: 112...124 Testing: 1st rack travel in: 12.80 rum : 1295...1325 Speed 2nd rack travel in: 4.00 rpm : 1465...1475 Speed 4th rack travel in: 1550 rpm : 0.00...1.00 Speed LOW IDLE 1 Control Lever position degrees: 66...78 Setting point w/out bumper spring : 400 rpm Rack travel in mm: 7.10 Testing: Speed rpm : 300 Minimum rack trave: 9.80 rpm : 400 Rack travel in mm : 6.90...7.30 CONSTANT REGULATION rpm : 345...495 Speed TORQUE CONTROL Dimension a mm :? st speed rpm : 1150 Rack travel in m: 14.20...14.30 1st speed 2nd speed rpm : 800 Rack travel in m: 13.00...13.40 3rd speed rpm : 1250 Rack travel in m: 13.80...14.00 Aneroid/Altitude Compensator Test 1st version Setting Speed : 1150 rom Pressure hPa : 1200 Rack travel mm : 14.20...14.30 Measurement

Torque control curve - 1st version 1/min: 1150 Speed 1st pressure hPa : -Rack travel in m: 11.10...11.50 2nd pressure hPa : 375 Rack travel in m: 12.10...12.20 3rd pressure hPa : 500 Rack travel in m: 13.10...13.50

START CUT-OUT Speed 1/min : 290 (300) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 Speed rpm : 800 Del.quantity cm3/: 144.0...150.0 1000 s: (141.0...153.0) cm3 : 8.00 Spread 1000 s: (12.0) Aneroid pressure h: -Speed rpm : 1150 Del.quantity cm3/: 106.5...110.5 1000 s: (104.5...112.5) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 12.80 Speed rpm : 1295...1325 STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 135.0...175.0 1000 s: (130.0...180.0) Rack travel in mm : 13.50...14.50 LOW IDLE Speed rpm : 400 Rack travel in mm : 6.90...7.30 Del.quantity cm3/: 15.0...21.0 1000 s: (13.0...23.0) Spread cm3 : 4.001000 s: (8.00) Remarks: : C.D.C. # 392 1922

Start-of-delivery blocking 5,75° after start of delivery of cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : CUM Edition : 02.94 Replaces Test oil : ISO-4113 Combination no. : 0 402 736 848 Injection pump Pump designation : PES6P120A120RS7314 : 0 412 726 901 EP type number Governor : RQV400...1250PA964-2 Governor design. : 0 421 815 374 Governer no. Customer-spec. information Customer : CDC : 6BTA-A Engine 1st version kW : 142.0 : 2500 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 2 417 413 086 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 90...110 Test nozzle holder : 1 688 901 103 assembly **Opening** pressure, bar : 207...210 Test lines : 1 680 750 015 Outside diameter x Wall thickness

: 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values ___ BEGINNING OF DELIVERY Test pressure, bar: 22...24 A13

: 3.55...3.65 : (3.50...3.70) Prestroke mm Rack travel in mm : 10.00...13.00 Firing order : 1-5-3-6-2-4 : 0-60-120-180-240-300 Phasing Tolerance + - ° : 0.50(0.75)Time to cyl. no. : 1 BASIC SETTING rpm: 1150 1st speed Rack travel in mm : 14.20...14.30 Del.quantity cm3/: 16.5...16.7 100 s: (16.2...17.0) Spread cm3 : 0.8100 s: (1.2) rpm : 400.0 2nd speed Rack travel in mm: 6.9...7.3 Del.quantity cm3/: 1.5...2.1 100 s: (1.3...2.3) cm3 : 0.4Spread 100 s: (0.8) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL rpm : 400 1st speed : 1.40...1.60 travel mm 2nd speed : 550 man : 3.10...3.50 travel mm 3rd speed rpm : 800 : 4.30...4.70 travel mm : 1250 4th speed rpm : 7.00...7.20 travel mm 5th speed rpm : 1500 : 9.20...9.60 travel mm FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1150

Aneroid pressure h: 1200

cm3

Spread

Del.quantity : 103.3...170.5)

: 8.00

1000 : (12.00)

RATED SPEED 1st version Control lever position degrees: 112...124 Testing: 1st rack travel in: 12.70 rpm : 1295...1325 Speed 2nd rack travel in: 4.00 rpm : 1465...1475 Speed 4th rack travel in: 1550 rpm : 0.00...1.00Speed LOW IDLE 1 Control Lever position degrees: 66...78 Setting point w/out bumper spring rpm : 400 Rack travel in mm: 7.10 Testing: Speed rpm : 300 Minimum rack trave: 9.80 : 400 rom Rack travel in mm : 6.90...7.30 CONSTANT REGULATION rpm : 345...495 Speed TORQUE CONTROL Dimension a mm :? Torque control curve - 1st version 1st speed rpm : 1150 Rack travel in m: 14.10...14.20 rpm : 800 2nd speed Rack travel in m: 13.00...13.20 3rd speed rpm : 1250 Rack travel in m: 13.80...14.00 Aneroid/Altitude Compensator Test 1st version Setting Speed : 1150 man. Pressure hPa : 1200 Rack travel mm : 14.10...14.20 Measurement 1/min: 1150 Speed Rack travel in m: 11.10...11.50 2nd pressure hPa : 375
Rack travel in m: 12.10...12.20
3rd pressure hPa : 500 Rack travel in m: 13.10...13.50

1/min: 290 (300) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 Speed rpm: 800 Del.quantity cm3/: 144.0...150.0 1000 s: (141.0...153.0) Spread cm3 : 8.00 1000 s: (12.0) Speed rpm: 1150
Del.quantity cm3/: 106.5...110.5
1000 s: (104.5...112.5) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 12.70 rpm : 1295...1325 Speed STARTING FUEL DELIVERY rpm : 100 Del.quantity cm3/: 135.0...175.0 1000 s: (130.0...180.0) Rack fravel in mm : 13.50...14.50 LOW IDLE Speed rpm : 400 Rack travel in mm : 6.90...7.30 Del.quantity cm3/: 15.0...21.0 1000 s: (13.0...23.0) Spread cm3 : 4.001000 s: (3.00) Remarks: : C.D.C. # 392 1922 Start-of-delivery blocking 5,75° after start of delivery of cylinder no. 1.

START CUT-OUT

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB : 02.94 Edition Replaces : 04.92 Test oil : ISO-4113

Combination no. : 0 402 746 918

Injection pump

Pump designation : PES6P120A720LS7238

-10

EP type number : 0 412 726 873

Governor

Governor design. : R0300/1100PA1013

Governer no. : 0 421 801 599

Customer-spec. information

Customer : MERCEDES-BENZ

Enaine : 0M447 hLA

: 220.0 : 2200 1st version kW Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 100...120

Test nozzle holder

: 1 688 901 105 assembly

Opening

pressure, bar : 207...210

Orifice plate

diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter

x Wall thickness

x Length mm : 8.00x2.50x1000

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.50...5.60

: (5.45...5.65) Rack travel in mm : 20.00...21.00

Firing order : 6-2-4-1-5-3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.30 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm: 600

Rack travel in mm : 14.00...14.20

Del.quantity cm3/: 21.3...21.5

100 s: (21.0...21.8)

Spread cm3 : 0.5

100 s: (0.9)

rpm : 300 2nd speed

Rack travel in mm: 6.0...6.6 Del.quantity cm3/: 1.6...2.2

100 s: (1.3...2.5)

cm3 : 0.8

100 s: (1.2)

GUIDE SLEEVE POSITION

Control-lever position

Degree: 108...110

rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Spread

Speed rpm : 600 Aneroid pressure h: 600

: 213.0...215.0 Del.quantity

1000 : (210.0...218.0)

: 5.00 Spread cm3

1000 : (9.00)

RATED SPEED

1st version

Control Lever

position degrees: 94.0...102.0

Setting point:

Speed rom : 600 Rack travel in mm: 20.0

Testina:

1st rack travel in: 13.60 rpm : 1145...1160 Speed

2nd rack travel in: 4.00

Speed rpm : 1230...1260 4th rack travel in: 1350

rom : 0.00...1.50Speed

LOW IDLE 1 Control Lever

position degrees: 69.0...77.0 Setting point w/out bumper spring

Speed rpm : 300 Rack travel in mm: 6.30

Testing:

: 200 Speed rpm Minimum rack trave: 8.20 : 300 Speed CDM

Rack travel in mm : 6.20...6.40

Rack travel in mm: 2.00 rpm : 380...420 Speed

Aneroid/Altitude Compensator Test

1st version Settina

: 600 Speed man. hPa : 600 Pressure

: 14.00...14.20 Rack travel mm

Measurement

1/min: 600 Speed

1st pressure hPa : 200

Rack travel in m: 12.30...12.50

2nd pressure hPa : 400

Rack travel in m: 13.70...13.90

3rd pressure hPa : 800

Rack travel in m: 14.30...14.50

START CUT-OUT

1/min : 220 (240) Speed

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1400

Speed rpm : 1100
Del.quantity cm3/: 229.0...232.0
1000 s: (226.0...235.0)

Spread cm3 : 8.001000 s: (12.0)

Aneroid pressure h: 1400 Speed rom : 700

Del.quantity cm3/: 233.0...237.0 1000 s: (230.0...240.0)

cm3 : 8.00 Spread 1000 s: (12.0)

Aneroid pressure h: -

rpm : 500 Speed

Del.quantity cm3/: 140.0...142.0

1000 s: (137.0...145.0) 1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.60

Speed rom : 1145...1161

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 220.0...240.0 1000 s: (216.0...244.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB : 02.94 Edition Replaces : 08.92 Test oil : ISO-4113 Combination no. : 0 402 746 922 Injection pump Pump designation: PES6P120A720LS7238-1 EP type number : 0 412 726 873 Governor Governor design. : R9300/1100PA1013-3 Governer no. : 0 421 801 609 Customer-spec. information Customer : MERCEDES-BENZ Engine : 0M447 hLA 1st version kW : 220.0 : 2200 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 100...120 Test nozzle holder : 1 688 901 105 assembly Opening pressure, bar : 207...210 Orifice plate

diameter mm : 0,8

Test Lines : 1 680 750 075

Outside diameter x Wall thickness x Length mm

: 8.00x2.50x1000

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values ____

BEGINNING OF DELIVERY Test pressure, bar: 25...27 : 5.50...5.60 Prestroke mm : (5.45...5.65) Rack travel in mm : 20.00...21.00 Firing order : 6-2-4-1-5-3 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.30 (0.70) Time to cyl. no. : 6 BASIC SETTING

1st speed rpm: 600 Rack travel in mm : 13.70...13.90 Del.quantity cm3/: 20.5...20.7 100 s: (20.2...21.0)

cm3 : 0.5Spread 100 s: (0.9)

2nd speed rpm : 300 Rack travel in mm : 5.9...6.5 Del.quantity cm3/ : 1.6...2.2 100 s: (1.3...2.5) Spread

cm3 : 0.6 100 s: (1.0)

GUIDE SLEEVE POSITION Control-lever position Degree: 108...110

rpm : 600 Speed

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version Speed rpm : 600 Aneroid pressure h: 600

Del.quantity : 205.0...207.0 1000 : (202.0...210.0)

: 5.00 Spread cm3 1000 : (9.00)

RATED SPEED

1st version Control lever

position degrees: 94.0...102.0

Setting point:

Speed rpm : 600 Rack travel in mm: 20.0 Testing: 1st rack travel in: 13.50 Speed rpm : 1145...1161 2nd rack travel in: 4.00 rpm : 1220...1250 Speed 4th rack travel in: 1300 rpm : 0.00...1.50Speed LOW IDLE 1 Control lever position degrees: 69.0...77.0 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 6.20 Testing: rpm Speed : 200 Minimum rack trave: 8.40 rpm : 300

Rack travel in mm : 6.10...6.30 Rack travel in mm: 2.00 rpm : 380...420 Speed

Aneroid/Altitude Compensator Test

1st version Setting Speed

: 600 rom Pressure hPa : 600 Rack travel mm

: 13.70...13.90

Measurement

1/min : 600 Speed

1st pressure hPa : 150

Rack travel in m: 11.60...11.80

2nd pressure hPa : 350

Rack travel in m: 13.10...13.30

3rd pressure hPa : 800

Rack travel in m: 13.90...14.10

4th pressure hPa : 950

Rack travel in m: 14.30...14.50

START CUT-OUT

1/min: 220 (240) Speed

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1400

Speed rpm : 1100 Del.quantity cm3/ : 221.0...224.0 1000 s: (218.0...227.0)

Spread cm3 : 8.00 1000 s: (12.0)

Aneroid pressure h: -

rpm : 500 Speed

Del.quantity cm3/: 140.0...142.0 1000 s: (137.0...145.0)

cm3 : 8.00

1000 s: (12.0)

BREAKAWAY

Spread

1st version 1mm rack travel less than

full load rack tr: 13.50

rpm : 1145...1161 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 220.0...240.0 1000 s: (216.0...244.0)

Remarks:

A18

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks

Test sheet : MB
Edition : 02.94
Replaces : 10.92
Test oil : ISO-4113

Combination no. : 0 402 746 923X

Injection pump

Pump designation : PES6P12OA72OLS7237-1 EP type number : 0 412 726 872

Governor

Governor design. : RQ300/1100PA1013-2 Governor no. : 0 421 801 611

Customer-spec, information

Customer : MERCEDES-BENZ

Engine : OM447 hA

1st version kW : 184.0 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 120...140

Test nozzle holder

assembly : 1 688 901 105

Opening

pressure, bar : 207...210

Orifice plate

diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter x Wall thickness

x Length mm : 8.00x2.50x1000

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30 : (5.15...5.35)

Rack travel in mm : 20.00...21.00

Firing order : 6-2-4-1-5-3

Phasing : 0-60-120-180-240-300

Tolerance $+ - ^{\circ} : 0.30 (0.75)$

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm: 1100

Rack travel in mm : 13.65...13.75

Del.quantity cm3/: 19.8...20.0

100 s: (19.5...20.3)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300

Rack travel in mm : 6.2...6.8 Del.quantity cm3/ : 1.6...2.2

100 s: (1.3...2.5) cm3 : 0.8

Spread cm3 : 0.8 100 s: (1.2)

GUIDE SLEEVE POSITION Control-lever position

Degree: 108...110

Speed rpm: 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm: 1100 Aneroid pressure h: 1400

Del.quantity : 198.0...200.0 1000 : (195.0...203.0)

cm3 : 5.00

Spread cm3 : 5.00 1000 : (9.00)

RATED SPEED

1st version Control Lever

position degrees: 95.0...103.0

Setting point:

Speed rpm : 600 Rack travel in mm : 20.0

Testing:

1st rack travel in: 12.70 Speed rpm : 1145...1161

2nd rack travel in: 4.00

rpm : 1220...1250 Speed

4th rack travel in: 1300

rpm : 0.00...1.50 Speed

LOW IDLE 1 Control lever

position degrees: 72.0...80.0 Setting point w/out bumper spring

Speed rpm : 300 Rack travel in mm: 6.50

Testina:

Speed rpm : 200 Minimum rack trave: 8.30 rpm : 300 Speed

Rack travel in mm : 6.40...6.60

Rack travel in mm: 2.00 Speed rpm : 380...420

Aneroid/Altitude Compensator Test

1st version Setting

Speed : 500 rom hPa : Pressure

Rack travel mm : 12.00...12.30

Measurement

 $1/\min : 500$ Speed

1st pressure hPa : 600

Rack travel in m: 12.65...12.75

2nd pressure hPa : 800

Rack travel in m: 12.85...13.05

START CUT-OUT

1/min: 220 (240) Speed

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1400

Speed rpm: 800 Del.quantity cm3/: 201.0...205.0 1000 s: (198.0...208.0)

Spread cm3 : 8.00

1000 s: (12.0)

Aneroid pressure h: -Speed : 500 COM

Del.quantity cm3/: 144.0...146.0

1000 s: (141.0...149.0)

cm3 : 8.00Spread 1000 s: (12.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.70

rpm : 1145...1161 Speed

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 200.0...220.0

1000 s: (196.0...224.0)

Remarks:

A20

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 4.80...4.90 : (4.75...4.95) Note remarks Rack travel in mm : 12.50...13.50 : 6-2-4-1-5-3 Firing order : MAN Test sheet Edition : 02.94 : 12.93 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 402 746 958 Tolerance + - ° : 0.30 (0.75) Injection pump Time to cyl. no. : 6 Pump designation : PES6P120A720LS7209-2 : 0 412 726 898 EP type number BASIC SETTING Governor Governor design. : RQV300...900PA1103 1st speed rpm: 900: 0 421 814 076 Governer no. Rack travel in mm : 11.20...11.30 Customer-spec, information Customer : MAN Del.quantity cm3/: 22.9...23.1 Engine : D2866LE40 100 s: (22.6...23.4) 1st version kW : 265.0 Spread cm3 : 0.5: 1800 Rated speed 100 s: (0.9) TEST BENCH REQUIREMENTS 2nd speed rpm : 300.0
Rack travel in mm : 5.1...5.5 Test oil inlet temp. °C : 38...42 Del.quantity cm3/: 4.4...5.0 100 s: (4.1...5.3) Overflow valve Spread cm3 : 0.8: 1 417 413 025 100 s: (1.2) Inlet press., bar: 1.50 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 105 assembly GUIDE SLEEVE TRAVEL rpm : 300 1st speed Opening . travel mm : 1.12...1.32 pressure, bar : 207...210 2nd speed rpm : 360 : 1.79...2.19 travel mm Orifice plate 3rd speed : 410 LDW diameter mm : 0,8 : 2.36...2.56 travel mm 4th speed : 656 rpm : 4.54...4.94 travel mm Test lines : 1 680 750 089 : 966 5th speed rpm : 8.35...8.55 travel mm Outside diameter x Wall thickness GUIDE SLEEVE POSITION x Length mm : 8.00x2.50x600 Control-lever position Degree: -1 (A) Injection pump setting values Speed rpm : 1030 Insp. values in parentheses Rack travel in mm : 9.50...12.10 Set equal delivery quant. per values ___ FULL LOAD DELIV. AT FULL LOAD STOP BEGINNING OF DELIVERY 1st version Test pressure, bar: 25...27 Speed rpm : 900

: 229.0...231.0 Del.quantity

1000 : (226.0...234.0)

: 5.00 Spread cm3 1000 : (9.00)

RATED SPEED

1st version Control lever

position degrees: 116.0...124.0

Testing:

1st rack travel in; 10.20 rpm : 950...960 Speed 2nd rack travel in: 4.00

Speed rpm : 1010...1040 4th rack travel in: 1150

Speed rpm : 0.00...1.00

LOW IDLE 1 Control lever

position degrees: 79.0...87.0

Testing:

Speed rom : 200 Minimum rack trave: 7.00 Speed

Speed rpm : 300 Rack travel in mm : 5.20...5.40

CONSTANT REGULATION

rpm : 275...405 Speed

START CUT-OUT

1/min: 220 (240) Speed

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.20 Speed rpm : 950...960

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 208.0...228.0 1000 s: (204.0...232.0)

LOW IDLE

Speed rpm : 300 Rack travel in mm : 5.10...5.50 Del.quantity cm3/: 43.0...49.0

1000 s: (40.0...52.0)

cm3 : 8.00Spread

1000 s: (12.00)

Remarks:

: MAN-NR. 3-7304/1

Setting and blocking of pointer of start-of-delivery sensor on cyl. 6

start of delivery

A22

BOSCH INJ. PUMP TEST SPECIFICATIONS : 5.50...5.60 Prestroke mm : (5.45...5.65) Rack travel in mm : 20.00...21.00 Firing order : 6-3-5-2-4-1 Note remarks Test sheet Edition : 21.06.91 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : A KV1 877 8 -360 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation: PE6P12OA320LS7834 Time to cyl. no. : 6 EP type number : 0 412 626 841 Governor BASIC SETTING Governor design. : RQ300/950PA971 Governer no. : 0 421 801 543 1st speed rpm: 600 Customer-spec. information Rack travel in mm : 14.50...14.70 Customer : MB-NFZ Del.quantity cm3/: 22.7...22.9 Engine : 0M401 LA 100 s: (22.4...23.2) 1st version kW : 230.0 Spread cm3 : 0.5TEST BENCH REQUIREMENTS 100 s: (0.9) Test oil inlet temp. °C : 38...42 2nd speed rpm : 300.0Rack travel in mm : 6.3...6.9 Overflow valve Del.quantity cm3/: 1.6...2.2 : 1 417 413 025 100 s: (1.3...2.5) cm3 : 0.6Spread Inlet press., bar: 1.50 100 s: (1.0) Overflow (B) Setting of injection pump quantity min. 1/h: 100...120 with governor Test nozzle holder GUIDE SLEEVE TRAVEL : 1 688 901 105 assembly rpm : 300 1st speed 2.00...2.30 travel mm Opening. : 500 2nd speed rom pressure, bar : 207...210 5.90...6.10 travel mm 3rd speed rpm : 950 travel mm : 6.30...6.50 Test lines : 1 680 750 075 rpm : 1009 4th speed travel mm : 6.60...6.80 Outside diameter 5th speed : 1160 rpm x Wall thickness : 11.00...12.00 travel mm x Length mm : 8.00x2.50x1000 GUIDE SLEEVE POSITION (A) Injection pump setting values Control-lever position Insp. values in parentheses Degree: 108 Set equal delivery quant. rpm : 600 per values Rack travel in mm : 19.20...20.80 BEGINNING OF DELIVERY FULL LOAD DELIV. AT FULL LOAD STOP Test pressure, bar: 25...27

1st version

rpm : 600

Speed

Aneroid pressure h: 1100

Del.quantity : 227.0...229.0

1000 : (224.0...232.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version Control Lever

position degrees: 96...104

Setting point:

Speed rpm : 600 Rack travel in mm : 20.0

Testing:

1st rack travel in: 13.90 Speed rpm : 990...1005

2nd rack travel in: 4.00

Speed rpm : 1065...1095

4th rack travel in: 1200

Speed rpm : 0.00...1.50

LOW IDLE 1 Control lever

position degrees: 70...78
Setting point w/out bumper spring

Speed rpm : 300 Rack travel in mm : 6.6

Testing:

Speed rpm : 200 Minimum rack trave: 8.50 Speed rpm : 300

Rack travel in mm : 6.30...6.90

Rack travel in mm : 2.00 Speed rpm : 380...420

TORQUE CONTROL

Dimension a mm : 0.35 2nd speed rpm : 950

Rack travel in m: 14.90...15.10

3rd speed rpm : 800

Rack travel in m: 15.20...15.40

Aneroid/Altitude Compensator Test

1st version Setting

Speed rpm : 600

Measurement

Speed 1/min: 600

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1800

Speed rpm: 950

Del.quantity cm3/: 236.0...239.0 1000 s: (233.0...242.0)

Spread cm3 : 8.00 1000 s: (12.)

Aneroid pressure h: 1800

Speed rpm : 800 Del.quantity cm3/ : 243.0...247.0

1000 s: (240.0...250.0)

Spread cm3 : 8.00

1000 s: (12.00 Speed rpm : 500

Del.quantity cm3/: 122.0...124.0

1000 s: (119.G...127.0)

Spread cm3 : 8.00 1000 s: (12.00

PREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 13.90 Speed rpm : 990...1005

STARTING FUEL DELIVERY

Speed rpm : 100

Remarks:

:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : PER

Edition : 14.02.94

Replaces

Test oil : ISO-4113

Combination no. : 0 403 236 005

Injection pump

Pump designation : PES6MW100/720/3RS151

EP type number : 0 413 206 018

Governor

: RQV325...1300MW133-1 Governor design.

: 0 420 083 984 Governer no.

Customer-spec. information Customer : PERKINS

Engine : 180TI

1st version kw : 134.0 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 688 901 101

Openina

pressure, bar : 207...210

Test lines : 1 680 750 008

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.95...5.05 : (4.90...5.10)

Rack travel in mm: 13.00

: 1-5-3-6-2-4 Firing order

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm: 1300

Rack travel in mm : 14.30...14.40

Del.quantity cm3/: 13.8...14.0

100 s: (13.5...14.3)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 325.0 Rack travel in mm: 5.4...5.6 Del.quantity cm3/: 2.1...2.5 100 s: (1.9...2.7)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325

: 1.45...1.95 travel mm 2nd speed

361 man

2.09...2.59 travel mm

3rd speed 500 rom

3.67...4.17 travel mm

4th speed : 881 man

: 6.21...6.71 travel mm

5th speed : 1355 rpm travel mm : 9.98...10.48

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1 rpm : 1380 Speed

Rack travel in mm: 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Aneroid pressure h: 900

Del.quantity : 130.0...143.0)

Spread cm3 : 4.00 1000 : (7.50) RATED SPEED 1st version Control lever position degrees: 118...126 Testing: 1st rack travel in: 13.30 rpm : 1340...1350 Speed 2nd rack travel in: 4.00 Speed rpm : 1475...1505 4th rack travel in: 1600 Speed rpm : 0.00...1.00 LOW IDLE 1 Control lever position degrees: 72...80 Setting point w/out bumper spring : 325 rom Rack travel in mm: 5.5 Testing: rpm : 200 Speed Minimum rack trave: 8.00 Speed rpm : 325 Rack travel in mm : 5.40...5.60 Aneroid/Altitude Compensator Test 1st version Setting : 1300 Speed rpm Pressure hPa : 900 Rack travel mm : 14.30...14.40 Measurement Speed 1/min: 1300 1st pressure hPa : -Rack travel in m: 9.25...6.35 2nd pressure hPa : 250 Rack travel in m: 10.25...10.35 3rd pressure hPa : 400 Rack travel in m: 12.85...13.15 START CUT-OUT 1/min: 240 (270) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 900 rpm : 1300 Speed

Del.quantity cm3/: 138.0...143.0 1000 s: (135.0...143.0) cm3 : 4.00 1000 s: (7.50) Spread Aneroid pressure h: 900 : 800 rpm Del.quantity cm3/: 135.0...139.0 1000 s: (132.0...142.0) Spread cm3 : 6.001000 s: (9.00) Aneroid pressure h: 900 rpm : 500 Del.quantity cm3/: 110.0...114.0 1000 s: (107.0...117.0) Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/ : 71.0...73.0 1000 s: (69.0...75.0) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 13.30 rpm : 1340...1350 Speed STARTING FUEL DELIVERY rpm : 100 Speed Del.quantity cm3/: 78.0...92.0 1000 s: (75.0...95.0) LOW IDLE Speed rpm : 300
Rack travel in mm : 5.40...5.60
Del.quantity cm3/ : 21.0...25.0
1000 s: (18.5...27.5)
Spread cm3 : 3.50

Remarks:

Start-of-delivery blocking 46.5° before start of delivery of cylinder 1

1000 s: (5.50)

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BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition : 09.02.94 Replaces : ISO-4113 Test oil Combination no. : 0 403 244 031 Injection pump Pump designation : PES4MW100/720RS1513-EP type number : 0 413 204 014 Governor Governor design: RQV300...1300MW125-3 : 0 420 083 260 Governer no. Customer-spec. information Customer : MB Engine : 0M364LA 1st version kW : 104.0 Rated speed : 2600 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 419 992 198 Inlet press., bar: 1.50 Test nozzle holder assembly : 0 688 901 101 Openina pressure, bar : 207...210 Test lines : 1 680 750 089 Outside diameter x Wall thickness x Length mm : 8.00x2.50x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values ___ BEGINNING OF DELIVERY Test pressure, bar: 30...32 Prestroke mm : 5.20...5.30

: (5.15...5.35)

Rack travel in mm : 21.00 Firing order : 1-3-4-2 Phasing : 0-90-180-270 Tolerance + - ° : 0.50 (0.75) BASIC SETTING rpm : 13001st speed Rack travel in mm : 12.80...12.90 Del.quantity cm3/: 12.1...12.3 100 s: (11.9...12.5) cm3 : 0.3Spread 100 s: (0.6) rpm : 300.02nd speed Rack travel in mm: 4.2...4.4 Del.quantity cm3/: 1.2...1.6 100 s: (0.9...1.9) cm3 : 0.3 Spread 100 s: (0.5) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 300 : 1.15...1.65 travel mm 2nd speed rpm : 413 : 2.25...2.75 travel mm 3rd speed rpm : 880 : 4.75...5.25 travel mm : 1354 4th speed rpm travel mm : 8.43...8.93 GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1350 Speed Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1300 Aneroid pressure h: 1200 : 121.0...123.0 Del.quantity 1000 : (119.0...125.0) : 3.50 Spread cm3 1000 : (6.00)

RATED SPEED

1st version Control lever

position degrees: 114...122

Testing:

1st rack travel in: 11.80

rpm : 1340...1350 Speed

2nd rack travel in: 4.00

rpm : 1430...1460 Speed

4th rack travel in: 1550

Speed rpm : 0.00...1.00

LOW IDLE 1 Control lever

position degrees: 74...82

Testing:

Speed rpm : 200 Minimum rack trave: 6.00 Speed rpm: 300 Rack travel in mm: 4.20...4.40

Aneroid/Altitude Compensator Test

1st version

Setting

Speed : 500 man Pressure hPa : 1200

Rack travel mm : 12.80...12.90

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 6.80...7.00

2nd pressure hPa : 300

Rack travel in m: 8.10...8.30

3rd pressure hPa : 700

Rack travel in m: 11.25...11.35

START CUT-OUT

1/min: 180 (200) Speed

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200 Speed rpm : 750

Del.quantity cm3/: 118.0...121.0

1000 s: (115.5...123.5)

cm3 : 5.00 Spread

1000 s: (7.00)

Aneroid pressure h: -

Speed rpm : 500 Del.quantity cm3/: 35.0...37.0

1000 s: (33.0...39.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80

Speed rom : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 115.0...125.0 1000 s: (112.0...128.0)

LOW IDLE

Speed rpm : 300

Rack travel in mm : 4.20...4.40

Del.quantity cm3/: 12.0...16.0

1000 s: (9.5...18.5)

Spread cm3 : 3.50

1000 s: (5.50)

:

Remarks:

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB

: 15.02.94 Edition

Replaces

Test oil : ISO-4113

Combination no. : 0 403 244 032

Injection pump

Pump designation : PES4MW100/720RS1519-

EP type number : 0 413 204 016

Governor

Governor design. : RQV300...1300Mw132-1

Governer no. : 0 420 083 292

Customer-spec. information

: MB Customer

Engine : 0M364LA

1st version kW : 103.0

Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 0 688 901 101 assembly

Openina

pressure, bar : 207...210

Test lines : 1 680 750 089

Outside diameter

x Wall thickness

: 8.00x2.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

: 4.50...4.60 Prestroke mm

: (4.45...4.65)

Rack travel in mm: 21.00

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in nm : 13.85...13.95

Del.quantity cm3/: 12.5...12.7

100 s: (12.2...13.0)

cm3 : 0.3Spread

100 s: (0.6)

2nd speed rpm : 300.0 Rack travel in mm: 3.7...3.9

Del.quantity cm3/: 1.0...1.4

100 s: (0.75...1.65)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.66...1.16

2nd speed rpm : 629

travel mm : 2.9...3.4

3rd speed rpm : 820

travel mm : 3.86...4.34

4th speed rpm : 1150

travel mm

5th speed rpm

: 5.7...6.2 : 1354 : 7.52...8.02 travel mm

GUIDE SLEEVE POSITION Control-lever position

Degree: -1

rpm : 1510 Speed

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Aneroid pressure h: 1400

: 125.0...127.0 Del.quantity

1000 : (122.0...130.0)

: 3.50 cm3 Spread

1000 : (6.00)

RATED SPEED 1st version Control Lever position degrees: 112...120 Testing: 1st rack travel in: 12.90 Speed rpm : 1340...1350 2nd rack travel in: 4.00 Speed rpm : 1435...1465 4th rack travel in: 1550 rpm : 0.00...1.00 Speed LOW IDLE 1 Control lever position degrees: 67...75 Testina: Speed : 200 mor: Minimum rack trave: 4.50 : 300 Speed rpm Rack travel in mm: 3.7...3.9 Aneroid/Altitude Compensator Test 1st version Setting Speed : 500 man Pressure hPa : 1400 Rack travel mm : 13.85...13.95 Measurement 1/min: 500 Speed 1st pressure hPa :-Rack travel in m: 10.70...10.90 2nd pressure hPa : 550 Rack travel in m: 11.50...11.70 3rd pressure hPa : 800 Rack travel in m: 13.0...13.2 START CUT-OUT Speed 1/min: 200 (220) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1400

Speed rpm : 750
Del.quantity cm3/: 122.0...126.0
1000 s: (119.0...129.0) Spread cm3 : 6.001000 s: (9.00) Aneroid pressure h: 1400 Speed rpm : 600 Del.quantity cm3/: 126.0...130.0 1000 s: (123.0...133.0) Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/: 66.0...68.0 1000 s: (64.0...70.0) **BREAKAWAY** 1st version 1mm rack trayel less than full load rack tr: 12.90 rpm : 1340...1350 Speed STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/: 135.0...145.0 1000 s: (132.0...148.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 3.7...3.9
Del.quantity cm3/ : 10.0...14.0
1000 s: (7.5...16.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

•

B02

Speed

Spread

rpm

Aneroid pressure h: 1400

Del.quantity cm3/: 125.0...127.0

: 1300

cm3 : 5.00 1000 s: (7.50)

1000 s: (122.0...130.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB Edition : 15.02.94 Replaces Test oil : ISO-4113 Combination no. : 0 403 244 03213 Injection pump Pump designation : PES4MW100/720RS1519 EP type number : 0 413 204 013 Governor Governor design. : RQV300...1300Mv132-1 Governer no. : 0 420 083 292 Customer-spec. information : MB Customer Engine : OM364LA 1st version kW : 103.0 Rated speed : 2600 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 419 992 198 Inlet press., bar: 1.50 Test nozzle holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 Test lines : 1 680 750 089 Outside diameter x Wall thickness x Length mm : 8.00x2.50x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

Phasina : 0-90-180-270 Tolerance + - ° : 0.50 (0.75) BASIC SETTING 1st speed rpm: 1300 Rack travel in mm : 13.40...13.50 Del.quantity cm3/: 14.0...14.2 100 s: (13.7...14.5) Spread cm3 : 0.3100 s: (0.6) rpm : 300.0 2nd speed Pack travel in mm: 3.2...3.4 Del.quantity cm3/: 1.0...1.4 100 s: (0.75...1.65) Spread cm3 : 0.3100 s: (0.5) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 300 : 0.77...1.27 travel mm : 530 2nd speed man : 2.36...2.86 travel mm 3rd speed rpm : 630 travel mm : 3.29...3.79 4th speed : 939 man. travel mm 5.52...6.02 : 1355 5th speed rpm : 9.95...10.45 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1300 Speed Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1300 Aneroid pressure h: 1400 Del.quantity : 140.0...142.0 1000 : (137.0...145.0) Spread cm3 : 3.50 1000 : (6.00)

Firing order

: 1-3-4-2

per values

BEGINNING OF DELIVERY

Prestroke mm

Test pressure, bar: 30...32

Rack travel in mm: 21.00

: 4.50...4.60

: (4.45...4.65)

RATED SPEED 1st version Control lever position degrees: 110...118 Testing: 1st rack travel in: 12.50 Speed rpm : 1340...1350 2nd rack travel in: 4.00 rpm : 1435...1465 Speed 4th rack travel in: 1550 Speed rpm : 0.00...1.00LOW IDLE 1 Control lever position degrees: 64...72 Testina: Speed : 200 rpm Minimum rack trave: 4.00 Speed : 300 rpm Rack travel in mm: 3.2...3.4 Aneroid/Altitude Compensator Test 1st version Setting : 500 Speed rpm Pressure hPa : 1400 Rack travel mm : 13.40...13.50 Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 9.8...9.9 2nd pressure hPa : 600 Rack travel in m: 10.7...10.9 3rd pressure hPa : 900 Rack travel in m: 12.4...12.6 START CUT-OUT 1/min: 180 (200) Speed' FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1400 rpm : 1300 Del.quantity cm3/: 140.0...142.0 1000 s: (137.0...145.0)

cm3 : 4.00 1000 s: (7.50)

: 750

Aneroid pressure h: 1400

rpm

Del.quantity cm3/: 133.0...137.0 1000 s: (130.0...140.0) cm3 : 6.00Spread 1000 s: (9.00) Aneroid pressure h: 1400 Speed rpm : 600 Del.quantity cm3/: 133.0...137.0 100C s: (130.0...140.0) Aneroid pressure h: rom : 500 Speed Del.quantity cm3/: 57.0...59.0 1000 s: (55.0...61.0) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 12.50 Speed rpm : 1340...1350 STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/: 140.0...150.0 1000 s: (137.0...153.0) LOW IDLE Speed rpm : 300 Rack travel in mm: 3.2...3.4 Del.quantity cm3/: 10.0...14.0 1000 s: (7.5...16.5) cm3 : 3.50 Spread 1000 s: (5.50) Remarks:

Spread

Speed

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks

Test sheet : MB Edition : 15.02.94 Replaces

Test oil : ISC-4113

Combination no. : 0 403 244 034

Injection pump

Pump designation : PES4MW100/720RS1519

EP type number : 0 413 204 013

Governor

Governor design. : RQV300...1300MW132-3

: 0 420 083 296 Governer no.

Customer-spec. information

Customer : MB

Engine : 0M364LA

1st version kW : 77.0 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 792 198

Irilet press., bar: 1.50

Test nozzle holder

: 0 688 901 101 assembly

Opening

pressure, bar : 207...210

Test lines : 1 680 750 089

Outside diameter x Wall thickness

: 8.00x2.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY Test pressure, bar: 30...32

Prestroke mm : 4.50...4.60 : (4.45...4.65)

Rack travel in mm : 21.00

Firing order : 1-3-4-2

Phasina : 0-90-180-270

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 11.5...11.6

Del.quantity cm3/: 9.4...9.6

100 s: (9.2...9.8)

Spread cm3 : 0.3

100 s: (0.6)

rpm : 300.02nd speed Rack travel in mm: 3.9...4.1 Del.quantity cm3/: 1.0...1.4

100 s: (0.75...1.65)

Spread cm3 : 0.3100 s: (P.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

: 0.66...1.16 travel mm

2nd speed rpm : 629 : 2.9...3.4 travel mm

3rd speed rpm : 800

: 3.75...4.25 travel mm

rpm : 11404th speed : 5.63...6.13 travel mm

5th speed rpm : 1345

: 7.39...7.89 travel mm

GUIDE SLEEVE POSITION Control-lever position

Degree: -1

rpm : 1400

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300Aneroid pressure h: 1000

Del.quantity : 94.0...98.0)

cm3 : 3.50 1000 : (6.00)

B05

RATED SPEED 1st version Control lever position degrees: 106...114 Testina: 1st rack travel in: 1059 rom : 1340...1350 Speed 2nd rack travel in: 4.00 rpm : 1435...1465 Speed 4th rack travel in: 1550 rom : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 65...73 Testing: Speed rpm : 200 Minimum rack trave: 4.50 rpm : 300 Speed Rack travel in mm: 3.9...4.1 Aneroid/Altitude Compensator Test 1st version Setting Speed rpm : 500 hPa : 1000 Pressure Rack travel mm : 11.5...11.6 Measurement Speed 1/min: 500 1st pressure hPa : -Rack travel in m: 10.6...10.8 2nd pressure hPa : 500 Rack travel in m: 11.0...11.2 START CUT-OUT 1/min: 200 (220) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed rpm : 1300 Del.quantity cm3/: 94.0...96.0 1000 s: (92.0...98.0) Spread cm3 : 3.501000 s: (6.00) Aneroid pressure h: 1000

Spread cm3 : 5.001000 s: (7.00) Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/ : 65.0...67.0 1000 s: (63.0...69.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 10.50 Speed rpm : 1340...1350 STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/: 125.0...135.0 1000 s: (122.0...138.0) LOW IDLE Speed rpm : 300 Rack travel in mm: 3.9...4.1 Del.quantity cm3/: 10.0...14.0 1000 s: (7.5...16.5) cm3 : 3.50 Spread 1000 s: (5.50) Remarks:

Speed rpm : 750 Del.quantity cm3/ : 85.5...88.5

1000 s: (83.0...91.0)

B06

BOSCH INJ. PUMP TEST SPECIFICATIONS Rack travel in mm : 21.00 : 1-3-4-2 Firing order Note remarks Test sheet : MB Edition : 15.02.94 Phasing : 0-90-180-270 Replaces Test oil : ISO-4113 Tolerance + - ° : 0.50 (0.75) Combination no. : 0 403 244 032 BASIC SETTING Injection pump 1st speed rpm: 1300 Pump designation : PES4MW100/720RS1519-Rack travel in mm: 13.85...13.95 EP type number : 0 413 204 016 Governor Del.quantity cm3/: 12.5...12.7 Governor design. : RQV300...1300MW132-1 : 0 420 083 292 Governer no. 100 s: (12.2...13.0) Customer-spec, information Spread cm3 : 0.3Customer : MB 100 s: (0.6) : 0M364LA Engine 2nd speed rpm : 300.0
Rack travel in mm : 3.7...3.9
Del.quantity cm3/ : 1.0...1.4 1st version kW : 103.0 Rated speed : 2600 100 s: (0.75...1.65) TEST BENCH REQUIREMENTS Spread cm3 : 0.3100 s: (0.5) Test oil inlet temp. °C : 38...42 (B) Setting of injection pump with governor Overflow valve : 1 419 992 198 GUIDE SLEEVE TRAVEL 1st speed rpm : 300 Inlet press., bar: 1.50 : 0.66...1.16 travel mm 2nd speed rpm : 629 Test nozzle holder : 2.9...3.4 travel mm : 0 688 901 101 assembly 3rd speed : 820 rpm travel mm : 3.84...4.34 Opening rpm : 1150 4th speed pressure, bar : 207...210 travel mm : 5.7...6.2 : 1354 5th speed rpm : 7.52...8.02 travel mm Test lines : 1 680 750 089 GUIDE SLEEVE POSITION Outside diameter Control-lever position x Wall thickness Degree: -1 x Length mm : 8.00x2.50x600 rpm : 1300 Speed Rack travel in mm : 15.20...17.80 (A) Injection pump setting values Insp. values in parentheses FULL LOAD DELIV. AT FULL LOAD STOP Set equal delivery quant. per values 1st version rpm : 1300 Speed BEGINNING OF DELIVERY Aneroid pressure h: 1400 1000 : (122.0...130.0) cm3 : 3.50 Test pressure, bar: 30...32 Del.quantity : 4.50...4.60 Prestroke mm Spread : (4.45...4.65) 1000 : (6.00)

RATED SPEED 1st version Control lever position degrees: 112...120 Testing: 1st rack travel in: 12.9 rpm : 1340...1350 Speed 2nd rack travel in: 4.00 rpm : 1435...1465 Speed 4th rack travel in: 1550 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 67...75 Testing: Speed : 200 rpm Minimum rack trave: 4.50 rpm : 300 Speed Rack travel in mm: 3.7...3.9 Aneroid/Altitude Compensator Test 1st version Setting Speed : 500 morn hPa : 1400 Pressure : 13.85...13.95 Rack travel mm Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 10.7...10.9 2nd pressure hPa : 550 Rack travel in m: 11.5...11.7 3rd pressure hPa : 800 Rack travel in m: 13.0...13.2 START CUT-OUT 1/min: 200 (220) Speed FUEL DELIVERY CHARACTERISTICS

Speed rpm : 750 Del.quantity cm3/ : 122.0...126.0 1000 s: (119.0...129.0) cm3 : 6.00Spread 1000 s: (9.00) Aneroid pressure h: 1400 Speed rpm : 600 Del.quantity cm3/: 126.0...130.0 1000 s: (123.0...133.0) Aneroid pressure h: rpm : 500 Speed Del.quantity cm3/: 66.0...68.0 1000 s: (64.0...70.0) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 12.90 rpm : 1340...1350 Speed STARTING FUEL DELIVERY Speed rpm : 100Del.quantity cm3/: 135.0...145.0 1000 s: (137.0...148.0) LOW IDLE Speed rpm : 300 Rack travel in mm : 3.7...3.9 Del.quantity cm3/ : 10.0...14.0 1000 s: (7.5...16.5) cm3 : 3.50Spread 1000 s: (5.50) Remarks:

Spread

1st version

Aneroid pressure h: 1400

Aneroid pressure h: 1400

Speed rpm : 1300 Del.quantity cm3/ : 125.0...127.0 1000 s: (122.0...130.0)

cm3 : 4.00

1000 s: (7.50)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB Edition : 15.02.94 Replaces Test oil : ISO-4113 Combination no. : 0 403 244 034 Injection pump Pump designation : PES4MW100/720RS1519 EP type number : 0 413 204 013 Governor Governor design. : RQV300...1300MW132-3 : 0 420 083 296 Governer no. Customer-spec. information Customer : MB Engine : 0M364LA 1st version kW : 77.0 Rated speed : 2600 TEST BENCH REQUIREMENTS Test oil inlet temp. *C : 38...42 Overflow valve : 1 419 992 198 Inlet press., bar: 1.50 Test nozzle holder assembly : 0 688 901 101 Openina pressure, bar : 207...210 Test lines : 1 680 750 089 Outside diameter x Wall thickness

x Length mm : 8.00x2.50x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values BEGINNING OF DELIVERY Test pressure, bar: 30...32 Prestroke mm : 4.50...4.60 : (4.45...4.65) Rack travel in mm: 21.00

Firing order : 1-3-4-2 Phasina : 0-90-180-270 Tolerance + - ° : 0.50 (0.75) BASIC SETTING 1st speed rpm: 1300 Rack travel in mm : 11.5...11.6 Del.quantity cm3/: 9.4...9.6 100 s: (9.2...9.8) cm3 : 0.3Spread 100 s: (0.6) 2nd speed rpm : 300.0Rack travel in mm: 3.9...4.1 Del.quantity cm3/: 1.0...1.4 100 s: (0.75...1.65) Spread cm3 : 0.3100 s: (0.5) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL rpm : 300 1st speed travel mm : 0.66...1.16 2nd speed rpm : 629 travel mm : 2.9...3.4 3rd speed rpm : 800 : 3.75...4.25 travel mm 4th speed rpm : 1140: 5.63...6.13 travel mm 5th speed rpm : 1345 travel mm : 7.39...7.89 GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1400 Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1300 Aneroid pressure h: 1000 Del.quantity : 94.0...96.0 1000 : (92.0...98.0) Spread : 3.50 cm3 1000 : (6.00)

RATED SPEED cm3 : 5.00 Spread 1000 s: (7.00) 1st version Aneroid pressure h: -Control lever Speed rpm: 500 bel.quantity cm3/: 65.0...67.0 position degrees: 106...114 1000 s: (63.0...69.0) Testing: 1st rack travel in: 10.5 rpm : 1340...1350 Speed **BREAKAWAY** 2nd rack travel in: 4.00 rpm : 1435...1465 Speed 1st version 4th rack travel in: 1550 1mm rack travel less than Speed rpm : 0.00...1.00 full load rack tr: 10.50 LOW IDLE 1 rpm : 1340...1350 Speed Control lever position degrees: 65...73 STARTING FUEL DELIVERY Testing: Speed rpm Speed rpm : 100 Del.quantity cm3/: 125.0...135.0 Minimum rack trave: 4.50 : 300 Speed 1000 s: (122.0...138.0) **LDW** Rack travel in mm: 3.9...4.1 LOW IDLE Aneroid/Altitude Compensator Test Speed rpm : 300 Rack travel in mm : 3.9...4.1 Del.quantity cm3/ : 10.0...14.0 1st version 1000 s: (7.5...16.5) Setting cm3 : 3.50Spread Speed man : 500 1000 s: (5.50) Pressure hPa : 1000 Rack travel mm : 11.5...11.6 Remarks: Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 10.6...10.8 2nd pressure hPa : 500 Rack travel in m: 11.0...11.2 START CUT-OUT 1/min: 200 (220) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 rpm : 1300 Speed Del.quantity cm3/: 94.0...96.0 1000 s: (92.0...98.0) Spread cm3 : 3.50 1000 s: (6.00) Aneroid pressure h: 1000 rpm : 750 Speed Del.quantity cm3/: 85.5...88.5

1000 s: (83.0...91.0)

Note remarks

Test sheet

Edition

: 15.02.94

Replaces

Test oil

: ISO-4113

Combination no. : 0 403 244 035

Injection pump

Pump designation : PES4MW100/720RS1519

EP type number

: 0 413 204 013

Governor

Governor design. : RQV300...1300MW132-3

Governer no.

: 0 420 083 296

Customer-spec. information

Customer

: MB

Engine

: 0M364LA

1st version kW

: 77.0

Rated speed

: 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C

: 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly

: 0 688 901 101

Opening

pressure, bar

: 207...210

Test lines

: 1 680 750 089

Outside diameter

x Wall thickness

x Length mm

: 8.00x2.50x600

(A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm

: 4.50...4.60

: (4.45...4.65)

Rack travel in mm : 21.00

Firing order

: 1-3-4-2

Pnasing

: 0-90-180-270

Tolerance + - °

: 0.50 (0.75)

BASIC SETTING

1st speed

rpm: 1300

Rack travel in mm : 11.5...11.6

Del.quantity cm3/: 9.4...9.6

100 s: (9.2...9.8)

Spread

cm3 : 0.3

100 s: (0.6)

rpm : 300.0

2nd speed Rack travel in mm : 3.9...4.1 Del.quantity cm3/ : 1.0...1.4

100 s: (0.75...1.65)

Spread

cm3 : 0.3100 s: (0.5)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

rpm : 300 1st speed

: 0.66...1.16 travel mm

rpm : 629 2nd speed

: 2.9...3.4

travel mm 3rd speed

rpm : 800

travel mm : 3.75...4.25

4th speed rpm : 1140

: 5.63...6.13 travel mm

5th speed

rpm : 1345

: 7.39...7.89 travel mm

GUIDE SLEEVE POSITION Control-lever position

Degree: -1

rpm : 1400

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

Spread

rpm : 1300

Aneroid pressure h: 1000

: 94.0...96.0 Del.quantity

1000 : (92.0...98.0) cm3 : 3.50

1000 : (6.00)

RATED SPEED Spread cm3 : 5.001000 s: (7.00) 1st version Aneroid pressure h: -Speed rpm : 500 bel.quantity cm3/ : 65.0...67.0 1000 s: (63.0...69.0) Control lever position degrees: 106...114 Testing: 1st rack travel in: 10.5 rpm : 1340...1350 Speed **BREAKAWAY** 2nd rack travel in: 4.00 Speed rpm : 1435...1465 4th rack travel in: 1550 1st version 1mm rack travel less than Speed rpm : 0.00...1.00 full load rack tr: 10.50 LOW IDLE 1 Speed rpm : 1340...1350 Control lever position degrees: 65...73 STARTING FUEL DELIVERY Testing: Speed rpm : 200 Speed rpm : 100 Minimum rack trave: 4.50 Del.quantity cm3/: 125.0...135.0 Speed rpm 1000 s: (122.0...138.0) Rack travel in mm: 3.9...4.1 LOW IDLE Aneroid/Altitude Compensator Test rpm : 300 Speed Rack travel in mm: 3.9...4.1 Del.quantity cm3/: 10.0...14.0 1000 s: (7.5...16.5) Spread cm3: 3.50 1000 s: (5.50) 1st version Setting Speed : 500 rpm Pressure hPa : 1000 Rack travel mm : 11.5...11.6 Remarks: Measurement $1/\min : 500$ Speed 1st pressure hPa : -Rack travel in m: 10.6...10.8 2nd pressure hPa : 500 Rack travel in m: 11.0...11.2 START CUT-OUT Speed 1/min: 200 (220) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed rpm : 1300
Del.quantity cm3/: 94.0...96.0
1000 s: (92.0...98.0)
Spread cm3 : 3.50 1000 s: (6.00) Aneroid pressure h: 1000 rpm : 750 Speed Del.quantity cm3/: 85.5...88.5 1000 s: (83.0...91.0)

Note remarks

Test sheet : MB6,1I Edition : 09.02.94

: 03.92 Replaces Test oil : ISO-4113

Combination no. : 0 403 246 031

Injection pump

Pump designation : PES6MW100/720RS1515

EP type number : 0 413 206 013

Governor

Governor design. : RQV300...1300Mw125-4

: 0 420 083 284 Governer no.

Customer-spec. information Customer : MB--NF7

: 0M366LA Engine

1st version kW : 127.0 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 0 688 901 101 assembly

Openina

pressure, bar : 207...210

Test lines : 1 680 750 089

Outside diameter x Wall thickness

x Length mm : 8.00x2.50x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

: 5.20...5.30 : (5.15...5.35) Prestroke mm

Rack travel in mm : 21.00...0.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rom : 1300

Rack travel in mm: 11.50...11.60

Del.quantity cm3/: 9.9...10.1

100 s: (9.7...10.3)

Spread cm3 : 0.3

100 s: (0.6)

rpm : 300.02nd speed Rack travel in mm: 3.9...4.2 Del.quantity cm3/: 1.0...1.4

100 s: (0.7...1.6)

cm3 : 0.3Spread 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

rpm : 1350 1st speed

: 8.60...9.00 travel mm

rpm : 880 2nd speed

: 4.90...5.10 travel mm

3rd speed rpm : 500

travel mm : 2.70...3.30

rpm : 300 4th speed

travel mm : 1.20...1.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

rpm : 1300 Speed Aneroid pressure h: 1000

: 99.0...101.0 Del.quantity 1000 : (97.0...103.0)

: 3.50 Spread cm3

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 117...125

Testing:

1st rack travel in: 10.50

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: 1340...1350 Speed rom 2nd rack travel in: 4.00 rpm : 1430...1460 Speed 4th rack travel in: 1550 rom : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 62...70 Setting point w/out bumper spring rpm : 300 Speed Rack travel in mm: 4.05 Testing: Speed LC4B : 200 Minimum rack trave: 5.00 : 300 Speed rom Rack travel in mm : 3.90...4.20 Aneroid/Altitude Compensator Test 1st version Settina **Eeeq** : 500 non Pressure hPa : 1000 : 11.50...11.60 Rack travel mm Measurement $1/\min : 500$ Speed 1st pressure hPa : -Rack travel in m: 8.70...8.90 2nd pressure hPa : 300 Rack travel in m: 9.40...9.6000 3rd pressure hPa : 500 Rack travel in m: 10.80...11.00 START CUT-OUT Speed 1/min : 220 (240) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed : 1300 rpm Del.quantity cm3/: 99.0...101.0 1000 s: (97.0...103.0) cm3 : 5.00 Spread 1000 s: (7.0) Aneroid pressure h: 1000 Speed rpm : 750 Del.quantity cm3/ : 90.5...93.5 1000 s: (88.0...96.0) cm3 : 5.00 Spread 1000 s: (7.00) Aneroid pressure h: -

Speed rpm : 500 Del.quantity cm3/ : 35.0...37.0 1000 s: (33.0...39.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.50 Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 115.0...125.0 1000 s: (112.0...128.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 3.90...4.20
Del.quantity cm3/ : 10.0...14.0
1000 s: (7.5...16.5)
Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

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Note remarks

Test sheet : MB 6,1 I 1 Edition : 09.02.94 Replaces : 06.92 Test oil : ISO-4113

Combination no. : 0 403 246 032

Injection pump

Pump designation : PES6MW100/720RS1515

: 0 413 206 013 EP type number

Governor

Governor design. : RQV300...1300MW125-5

Governer no. : 0 420 083 285

Customer-spec. information : MB-NFZ Customer

Engine : 0M366LA

1st version kW : 142.0 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 0 688 901 101 assembly

Opening

pressure, bar : 207...210

Test lines : 1 680 750 089

Outside diameter x Wall thickness

x Length mm : 8.00x2.50x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 5.20...5.30

: (5.15...5.35)

Rack travel in mm : 21.00...0.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

BASIC SETTING

1st speed rpm: 1300

Rack travel in mm: 12.50...12.60

Del.quantity cm3/: 11.0...11.2

100 s: (10.8...11.4)

Spread cm3 : 0.3

100 s: (0.6)

rpm : 300.0 2nd speed Rack travel in mm: 4.2...4.4 Del.quantity cm3/: 1.0...1.4

100 s: (0.7...1.6)

cm3 : 0.3Spread 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1350

: 8.60...9.00 travel mm

2nd speed rpm : 880

: 4.90...5.10 travel mm

3rd speed rpm : 500

: 2.70...3.30 travel mm

4th speed rpm : 300

travel mm : 1.20...1.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300 Aneroid pressure h: 1100

: 110.0...112.0 Del.quantity 1000 : (108.0...114.0)

cm3 : 3.50 Spread

1000 : (6.00)

RATED SPEED

1st version Control lever

position degrees: 120...128

Testing:

1st rack travel in: 11.50

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: 1340...1350 Speed rom 2nd rack travel in: 4.00 rpm : 1450...1480 Speed 4th rack travel in: 1550 Speed rpm : 0.00...1.00LOW IDLE 1 Control lever position degrees: 62...70 Setting point wout bumper spring rpm : 300 Rack travel in mm: 4.3 Testing: Speed : 200 LCI Minimum rack trave: 5.00 : 300 rpm Rack travel in mm : 4.20...4.40 Aneroid/Altitude Compensator Test 1st version Settina Speed rpm : 500 Pressure hPa : 1100 : 12.50...12.60 Rack travel mm Measurement Speed 1/min: 500 1st pressure hPa : -Rack travel in m: 9.00...9.10 2nd pressure hPa : 250 Rack travel in m: 9.70...9.90 3rd pressure hPa : 500 Rack travel in m: 11.45...11.65 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1100 Speed rpm : 1300 Del.quantity cm3/ : 110.0...112.0 1000 s: (108.0...114.0) cm3 : 5.00Spread 1000 s: (7.0) Aneroid pressure h: 1100 Speed : 750 man Del.quantity cm3/: 105.0...108.0 1000 s: (102.5...111.5) cm3 : 5.00Spread 1000 s: (7.00)

Speed rpm : 500 Del.quantity cm3/ : 37.0.,.39.0 1000 s: (35.0...41.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 11.50 Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/: 115.0...125.0 1000 s: (112.0...128.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 4.20...4.40
Del.quantity cm3/ : 10.0...14.0
1000 s: (7.5...16.5)
Spread cm3 : 3.50
1000 s: (5.50)

:

Remarks:

B16

Aneroid pressure h: -

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB : 10.02.94 Edition : 07.92 Replaces Test oil : ISO-4113 Combination no. : 0 403 246 033 Injection pump Pump designation : PES6MW100/720RS1511 EP type number : 0 413 206 011 Governor Governor design.: RQV300...1300MW125-6 Governer no. : 0 420 083 286 Customer-spec. information Customer : MERCEDES-BENZ Engine : 0M366LA 1st version kW : 156.0 Rated speed : 2600 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 419 992 198 Inlet press., bar: 1.50 Test nozzle holder : 0 688 901 101 assembly Openina . pressure, bar : 207...210 Test Lines : 1 680 750 089 Outside diameter x Wall thickness x Length mm : 8.00x2.50x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values BEGINNING OF DELIVERY Test pressure, bar: 30...32 Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 21.00...0.00 **B17**

: 1-5-3-6-2-4 Firing order Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75)BASIC SETTING 1st speed rpm: 1300 Rack travel in mm : 12.60...12.70 Del.quantity cm3/: 11.5...11.7 100 s: (11.3...11.9) Spread cm3 : 0.3100 s: (0.6) rpm : 300.0 2nd speed Rack travel in mm: 4.1...4.3 Del.quantity cm3/: 1.0...1.4 100 s: (0.7...1.6) Spread cm3 : 0.3100 s: (0.5) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL rpm : 1350 1st speed : 8.60...9.00 travel mm 2nd speed rpm : 880 : 4.90...5.10 travel mm 3rd speed rpm : 500 : 2.70...3.30 travel mm rpm : 300 4th speed travel mm : 1.20...1.60

GUIDE SLEEVE POSITION Control-lever position

Degree: -1 rpm : 1340 Speed Rack travel in mm: 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP

1st version Speed rpm : 1300 Aneroid pressure h: 1400 Del.quantity : 115.0...117.0 1000 : (113.0...119.0) : 3.50 Spread cm3 1000 : (6.00)

RATED SPEED

1st version Control lever position degrees: 118...126 Testing: 1st rack travel in: 11.60 rpm : 1340...1350 Speed 2nd rack travel in: 4.00 rpm : 1455...1485 Speed 4th rack travel in: 1550 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 61...69 Testing: Speed rpm : 200 Minimum rack trave: 5.00 Speed Speed rpm : 300 Rack travel in mm : 4.10...4.30 Aneroid/Altitude Compensator Test 1st version Setting Speed rpm : 500 Pressure hPa : 1400 Rack travel mm : 12.60...12.70 Measurement Speed 1/min : 500 1st pressure hPa : -Rack travel in m: 6.60...6.80 2nd pressure hPa : 300 Rack travel in m: 7.20...7.40 3rd pressure hPa : 900 Rack travel in m: 11.90...12.10 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1400 rpm : 1300 Del.quantity cm3/: 115.0...117.0 1000 s: (113.0...119.0) cm3 : 5.00 Spread 1000 s: (7.00) Aneroid pressure h: 1400 rpm : 750 Speed Del.quantity cm3/: 114.5...117.5

1000 s: (112.0...120.0)

Spread rm3 : 5.00
1000 s: (7.00)

Aneroid pressure h: Speed rpm : 500

Del.quantity cm3/: 36.0...38.0
1000 s: (34.0...40.0)

BREAKAWAY

1st version
1mm rack travel less than
full load rack tr: 11.60

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 115.0...125.0 1000 s: (112.0...128.0)

rpm : 1340...1350

LOW IDLE

Speed

Remarks:

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Note remarks

Test sheet

: MB

Edition

: 10.02.94

Replaces

Test oil

: ISO-4113

Combination no.

: 0 403 246 034

Injection pump

Pump designation : PES6MW100/720RS1517

EP type number

: 0 413 206 015

Governor

Governor design.: RQV300...1300Mw132

Governer no.

: 0 420 083 291

Customer-spec. information Customer

: MB-NF7

Engine

: 0M366LA

1st version kW

Rated speed

: 177.0 : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C

: 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly

: 0 688 901 101

Opening

pressure, bar

: 207...210

Test lines

: 1 680 750 089

Outside diameter

x Wall thickness

x Length mm

: 8.00x2.50x600

(A) Injection pump setting values

Insp. values in parentheses

Set equal delivery quant.

per values ___

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm

: 4.50...4.60

: (4.45...4.65)

Rack travel in mm : 21.00...0.00

B19

Firing order

: 1-5-3-6-2-4

Phasing

: 0-60-120-180-240-300

Tolerance + - °

: 0.50 (0.75)

BASIC SETTING

1st speed

Spread

Spread

rom : 1300

Rack travel in mm : 14.10...14.20

Del.quantity cm3/: 12.8...13.0

100 s: (12.5...13.3)

cm3 : 0.4

100 s: (0.7)

rpm : 300.0

2nd speed Rack travel in mm: 3.9...4.1

Del.quantity cm3/: 1.0...1.4

100 s: (0.7...1.6)

cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

rpm : 300 1st speed travel mm

: 0.82...1.32

2nd speed rpm : 555

: 4.06...4.56 travel mm

3rd speed rpm : 720

: 4.61...5.11 travel mm

4th speed rpm : 1100

travel mm : 6.27...6.77 rpm : 1355 5th speed

travel mm

: 8.21...8.71

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

rpm : 1300

Aneroid pressure h: 1400 : 128.0...130.0 Del.quantity

1000 : (125.0...133.0)

Spread

: 4.00

cm3 1000 : (7.50)

RATED SPEED

1st version

Control Lever

position degrees: 114...122

Testina: 1st rack travel in: 13.10 rpm : 1340...1350 Speed 2nd rack travel in: 4.00 rpm : 1475...1505 Speed 4th rack travel in: 1600 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 68...76 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 4.0 Testing: Speed : 200 non Minimum rack trave: 5.00 rpm : 300 Rack travel in mm : 3.90...4.10 Aneroid/Altitude Compensator Test 1st version Setting Speed : 500 mqn hPa : 1400 Pressure Rack travel mm : 14.10...14.20 Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 10.00...10.20 2rd pressure hPa : 500
Rack travel in m: 10.60...10.80
3rd pressure hPa : 850 Rack travel in m: 13.10...13.30 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1400 Speed rpm : 1300 Del.quantity cm3/ : 128.0...130.0 1000 s: (125.0...133.0) Spread cm3 : 6.00 1000 s: (9.0) Aneroid pressure h: 1400 rpm : 750 Del.quantity cm3/: 128.0...132.0 1000 s: (125.0...135.0)

Spread cm3 : 6.00 1000 s: (9.00) Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/ : 44.0...46.0 1000 s: (42.0...48.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 13.10 Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 135.0...145.0 1000 s: (132.0...148.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 3.90...4.10
Del.quantity cm3/ : 10.0...14.0
1000 s: (7.5...16.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Note remarks

Test sheet : MB

: 15.02.94 Edition

Replaces

: ISO-4113 Test oil

Combination no. : 0 403 246 035

Injection pump

Pump designation: PES6MW100/720RS1517-

EP type number : 0 413 206 017

Governor

Governor design. : RQV300...1300MW132-2

Governer no. : 0 420 083 293

Customer-spec, information : MB-NFZ Customer

: 0M366LA Engine

1st version kW : 125.0 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 0 688 901 101 assembly

Opening

pressure, bar : 207...210

Test Lines : 1 680 750 089

Outside diameter

x Wall thickness

: 8.00x2.50x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 4.50...4.60

: (4.45...4.65)

Rack travel in mm : 21.00...0.00 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

BASIC SETTING

1st speed rom: 1300

Rack travel in mm : 11.95...12.05

Del.quantity cm3/: 10.1...10.3

100 s: (9.9...10.5)

Spread cm3 : 0.4

100 s: (0.7)

rpm : 300.0 2nd speed Rack travel in mm: 4.0...4.2 Del.quantity cm3/: 1.0...1.4

100 s: (0.7...1.6)

Spread cm3 : 0.3100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

: 0.77...1.27 travel mm rpm : 490 2nd speed

: 2.0,..2.5 travel mm

rpm : 710

3rd speed

: 2.78...3.28 rpm : 1100 travel mm

4th speed

: 4.51...5.01 travel mm

rpm : 1353 5th speed

travel mm : 6.45...6.95

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300 Aneroid pressure h: 1000

Del.quantity

: 101.0...103.0 1000 : (99.0...105.0)

: 3.50 Spread cm3

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 112...120

Testing: 1st rack travel in: 11.0 rpm : 1340...1350 Speed 2nd rack travel in: 4.00 rpm : 1455...1485 Speed 4th rack travel in: 1550 Speed rpm : 0.00...1.00LOW IDLE 1 Control Lever position degrees: 67...75 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 4.1 Testing: Speed rpm : 200 Minimum rack trave: 5.00 rpm : 300 Speed Rack travel in mm: 4.0...4.2 Aneroid/Altitude Compensator Test 1st version Settina : 500 Speed rpm Pressure hPa : 1200 Rack travel mm : 11.95...12.05 Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 9.8...9.7 2nd pressure hPa : 150 Rack travel in m: 10.25...10.45 3rd pressure hPa : 300 Rack travel in m: 11.25...11.45 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed rpm : 1300 Del.quantity cm3/: 101.0...103.0 1000 s: (99.0...105.0) Spread cm3 : 3.501000 s: (6.0) Aneroid pressure h: 1000 Speed : 750 rpm Del.quantity cm3/: 91.5...94.5 1000 s: (89.0...97.0)

Spread cm3 : 5.501000 s: (7.00) Aneroid pressure h: 1000 : 600 Speed rpm Del.quantity cm3/: 93.5...96.5 1000 s: (91.0...99.0) Aneroid pressure h: rpm : 500 Speed Del.quantity cm3/: 52.0...54.0 1000 s: (50.0...56.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 11.0

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 110.0...120.0 1000 s: (107.0...123.0)

rpm : 1340...1350

LOW IDLE

Speed

Remarks:

Note remarks

Test sheet

Edition : 15.02.94

Replaces

Test oil : ISO-4113

Combination no. : 0 403 246 036

Injection pump

Pump designation : PES6MW100/720RS1517

EP type number : 0 413 206 015

Governor

Governor design. : RQV300...1300MW132-4

: 0 420 083 299 Governer no.

Customer-spec. information Customer : MB-NFZ

Engine : 0M366LA

1st version kW : 155.0 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 0 688 901 101 assembly

Opening

pressure, bar : 207...210

Test Lines : 1 680 750 089

Outside diameter

x Wall thickness

x Length mm : 8.00x2.50x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test prossure, bar: 30...32

: 4.50...4.60 Prestroke mm

: (4.45...4.65)

Rack travel in mm : 21.00...0.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 13.45...13.55

Del.quantity cm3/: 11.8....12.0

100 s: (11.6...12.2)

Spread cm3 : 0.4

100 s: (0.7)

rpm : 300.02nd speed Rack travel in mm: 3.9...4.1 Del.ouantity cm3/: 1.0...1.4

100 s: (0.7...1.6)

cm3 : 0.3Spread 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

travel mm : 0.77...1.27

2nd speed rpm : 490

: 2.0...2.5 travel mm

3rd speed rpm : 710

: 2.78...3.28 travel mm

rpm : 1100 4th speed

: 4.51...5.01 travel mm

rpm : 1353 5th speed

: 6.45...6.95 travel mm

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300 Aneroid pressure h: 1000

Del.quantity : 118.0...120.0 1000 : (116.0...122.0)

: 3.50

Spread cm3 1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 114...122

Testing: 1st rack travel in: 12.5 rpm : 1340...1350 2nd rack travel in: 4.00 rpm : 1470...1500 Speed 4th rack travel in: 1550 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 68...76 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 4.0 Testing: : 200 Speed rpm Minimum rack trave: 5.00 : 300 Speed rom Rack travel in mm: 3.9...4.1 Aneroid/Altitude Compensator Test 1st version Setting Speed : 500 rpm Pressure hPa : 1000 Rack travel mm : 13.45...13.55 Measurement 1/min : 500Speed 1st pressure hPa : -Rack travel in m: 10.1...10.3 2nd pressure hPa : 300 Rack travel in m: 10.7...10.9 3rd pressure hPa : 600 Rack travel in m: 12.5...12.7 START CUT-OUT 1/min : 200 (220) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 rpm : 1300 Speed Del.quantity cm3/: 118.0...120.0 1000 s: (116.0...122.0) cm3 : 3.50 Spread 1000 s: (6.0) Aneroid pressure h: 1000 : 750 Speed rpm Del.quantity cm3/: 117.5...120.5 1000 s: (115.0...123.0) Spread cm3: 5.50 1000 s: (7.00) Aneroid pressure h: 1000 Speed rpm: 600 Del.quantity cm3/: 117.5...120.5 1000 s: (115.0...123.0) Aneroid pressure h: -Speed rpm: 500 Del.quantity cm3/: 50.0...52.0 1000 s: (48.0...54.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 12.5 Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 125.0...135.0 1000 s: (122.0...138.0)

LOW IDLE

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Rack travel in mm : 12.00...14.00 Firing order : 1-5-3-6-2-4 Note remarks Test sheet : PER Edition : 10.02.94 Phasing : 0-60-120-180-240-300 Replaces : 09.92 Test oil : ISO-4113 Tolerance + - ° : 0.50 (0.75) Combination no. : 0 403 436 114 Time to cyl. no. : 1 Injection pump BASIC SETTING Pump designation : PES6MW100/320/3RS119 1st speed rpm: 1300 EP type number : 0 413 406 221 Governor Rack travel in mm : 14.10...14.20 Governor design. : RQV300...1300MW108K : 0 420 083 998 Governer no. Del.quantity cm3/: 13.25...13.45 Customer-spec. information 100 s: (12.95...13.75) Customer : PERKINS Spread cm3 : 0.3Engine : 180 TI 100 s: (0.6) 1st version kW : 134.0 Rated speed : 2600 2nd speed rpm : 300.0Rack travel in mm : 6.5...6.7 Del.quantity cm3/ : 1.4...1.8 TEST BENCH REQUIREMENTS 100 s: (1.1...2.0) Test oil Spread cm3 : 0.3inlet temp. °C : 38...42 100 s: (0.5) Overflow valve (B) Setting of injection pump : 1 419 992 198 with governor Inlet press., bar: 1.50 GUIDE SLEEVE TRAVEL 1st speed rpm : 1350 Test nozzle holder : 10.00...10.40 travel mm : 1 688 901 101 assembly 2nd speed rpm : 900 travel mm : 6.40...6.60 Opening 3rd speed : 480 rpm pressure, bar : 207...210 travel mm : 3.10...3.70 4th speed : 300 man travel mm : 1.40...1.80 Test lines : 1 680 750 008 GUIDE SLEEVE POSITION Outside diameter Control-lever position x Wall thickness Degree: -1 x Length mm : 6.00X2.00X600 Speed rpm : 1380 Rack travel in mm : 15.20...17.80 (A) Injection pump setting values Insp. values in parentheses FULL LOAD DELIV. AT FULL LOAD STOP Set equal delivery quant. per values 1st version Speed rpm : 1300 BEGINNING OF DELIVERY Aneroid pressure h: 900 : 132.5...134.5 Test pressure, bar: 30...32 Del.quantity 1000 : (129.5...137.5) : 3.30...3.40 Prestroke mm Spread : 3.50 cm3

1000 : (6.00)

: (3.25...3.45)

Rack travel in m: 10.40...10.50 RATED SPEED 3rd pressure hPa : 220 Rack travel in m: 11.05...11.35 1st version Control lever START CUT-OUT position degrees: 118...126 1/min: 240 (250) Speed Testing: 1st rack travel in: 13.15 FUEL DELIVERY CHARACTERISTICS rpm : 1340...1350 Speed 2nd rack travel in: 4.00 rpm : 1470...1500 Speed 1st version 4th rack travel in: 1600 Aneroid pressure h: 900 rrpm : 0.00...1.00 rpm : 1300 Speed Speed Del.quantity cm3/: 132.5...134.5 LOW IDLE 1 1000 s: (129.5...137.5) Control lever Spread cm3 : 4.00 position degrees: 70...78 1000 s: (7.5) Setting point w/out bumper spring Aneroid pressure h: 900 rpm : 300 rpm : 800 Speed Rack travel in mm : 6.6 Del.quantity cm3/: 124.0...128.0 1000 s: (121.0...131.0) Testina: Spread cm3 : 6.0Speed rpm : 200 1000 s: (9.0) Minimum rack trave: 8.00 Ameroid pressure h: 900 rpm : 300 rpm : 500 Speed Del.quantity cm3/: 106.0...110.0 1000 s: (103.0...113.0) Rack travel in mm : 6.50...6.70 CONSTANT REGULATION Aneroid pressure h: rpm : 330...500 rpm : 500 Speed Speed Del.quantity cm3/: 61.0...63.0 TORQUE CONTROL 1000 s: (59.0...65.0) Torque control curve - 1st version 1st speed rpm : 1300 Rack travel in m: 14.10...14.20 **BREAKAWAY** rpm : 800 2nd speed Rack travel in m: 13.10...13.30 1st version 3rd speed rpm : 500 1mm rack travel less than Rack travel in m: 11.60...11.80 4th speed rpm : 1000 Rack travel in m: 13.45...13.75 full load rack tr: 13.15 rpm : 1340...1350 Speed 5th speed rpm : 700 Rack travel in m: 12.60...12.90 STARTING FUEL DELIVERY Aneroid/Altitude Compensator Test Speed rpm : 100 Del.quantity cm3/: 78.0...92.0 1000 s: (75.0...95.0) 1st version Rack travel in mm : 19.00...21.00 Setting Speed : 1300 rom LOW IDLE hPa : 900 Pressure Rack travel mm : 14.10...14.20 Speed rpm : 300 Rack travel in mm : 6.50...6.70 Del.quantity cm3/: 14.0...18.0 Measurement 1/min: 1300 Speed 1000 s: (11.5...20.5) Spread cm3 : 3.50 1st pressure hPa : -1000 s: (5.50) Rack travel in m: 9.20...9.40 2nd pressure hPa : 180 Remarks:

Start-of-delivery blocking 46.5° before start of delivery of cylinder 1

Note remarks

Test sheet

Edition : 15.02.94

Replaces

Test oil : ISO-4113

Combination no. : 0 403 444 151

Injection pump

Pump designation: PES4MW100/720RS1235

EP type number : 0 413 404 121

Governor

Governor design. : RQV300...1300MW139

Governer no. : 0 420 083 304

Customer spec. information

Customer : MB

Engine : 0M364A

1st version kW : 79 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test Lines : 1 680 750 089

Outside diameter

x Wall thickness

x Length mm : 8.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values __

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.65...3.75

: (3.6...3.8)

Rack travel in mm: 19...21

Firing order : 1-3-4-2

Phasing : 0-90-180-270

Tolerance + - * : 0.50 (0.75)

BASIC SETTING

1st speed rpm : 1300

Rack travel in mm : 12.65...12.75

Del.quantity cm3/: 8.2...8.4

100 s: (8.0...8.6)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0 Rack travel in mm : 7.75...7.95 Del.quantity cm3/: 1.0...1.4

100 s: (0.7...1.6)

cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

Spread

1st speed rpm : 300

: 1.02...1.52 travel mm

2nd speed rpm : 390

travel mm : 2.14...2.64

3rd speed rpm : 550

travel mm : 3.31...3.81

rpm : 1354 4th speed

travel mm : 10.06...10.56

GUIDE SLEEVE POSITION Control-lever position

Degree: 113...121

rpm : 1430

Rack travel in mm : 9.5...10.5

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1300

Aneroid pressure h: 700 Del.quantity

: 82.0...84.0 1000 : (80.0...86.0)

: 3.50 cm3

1000 : (6.00)

RATED SPEED

Spread

B28

1st version Spread cm3 : 5.00 Control lever 1000 s: (7.00) position degrees: 109...117 Aneroid pressure h: -Speed rpm : 500Testing: Del.quantity cm3/: 46.0...48.0 1st rack travel in: 9.8 1000 s: (44.0...50.0) rpm : 1340...1350 Speed 2nd rack travel in: 4.00 rpm : 1440...1470 Speed BREAKAWAY 4th rack travel in: 1550 rpm : 0.00...1.00Speed 1st version 1mm rack travel less than LOW IDLE 1 Control lever full load rack tr: 9.8 position degrees: 69...77 Speed rpm : 1340...1350 Testing: STARTING FUEL DELIVERY Speed rpm : 200 Minimum rack trave: 9.5 : 300 Speed rpm Speed rpm : 100 Rack travel in mm : 7.75...7.95 Del.quantity cm3/: 78.0...88.0 1000 s: (75.0...91.0) Aneroid/Altitude Compensator Test LOW IDLE Speed rpm : 300 Rack travel in mm : 7.75...7.95 1st version Settina Del.quantity cm3/: 10.0...14.0 rpm : 500 hPa : 700 Speed nom 1000 s: (7.5...16.5) Pressure cm3 : 3.50 Spread Rack travel mm : 13.40...13.50 1000 s: (5.50) Measurement Remarks: 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 12.1...12.2 2nd pressure hPa : 150 Rack travel in m: 12.55...12.75
3rd pressure hPa : 210
Rack travel in m: 12.95...13.15 START CUT-OUT Speed 1/min: 200 (230) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 700 Speed rpm : 1300
Del.quantity cm3/: 82.0...84.0
1000 s: (80.0...86.0)
Spread cm3 : 3.50
1000 s: (6.00) Aneroid pressure h: 700 Speed rpm : 600 Del.quantity cm3/ : 75.0...78.0 1000 s: (72.5...80.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB Edition : 16.02.94 Replaces Test oil : ISO-4113 Combination no. : 0 403 444 152 Injection pump Pump designation : PES4MW100/720RS1235 EP type number : 0 413 404 121 Governor Governor design. : RQV300...1300MW140 Governer no. : 0 420 083 305 Customer-spec. information Customer : MB Engine : OM364A 1st version kW Rated speed : 2600 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 419 992 198 Inlet press., bar: 1.50 Test nozzle holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 : 1 680 750 089 Test lines Outside diameter x Wall thickness x Length mm : 8.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

Firing order : 1- 3- 4- 2 Phasing : 0-90-180-270 Tolerance + - ° : 0.50 (0.75) BASIC SETTING 1st speed rpm: 1300 Rack travel in mm: 12.65...12.75 Del.quantity cm3/: 8.2...8.4 100 st (8.0...8.6) Spread cm3 : 0.3100 s: (0.6) 2nd speed rpm : 300.0 Rack travel in mm : 7.75...7.95 Del.quantity cm3/: 1.0...1.4 100 s: (0.7...1.6) Spread cm3 : 0.3100 s: (0.5) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 300 : 1.02...1.52 travel mm 2nd speed rpm : 390 : 2.14...2.64 travel mm 3rd speed rpm : 510 : 3.31...3.81 travel mm : 1354 4th speed rpm : 10.06...10.56 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: 113...121 rpm : 1430 Speed Rack travel in mm : 9.5...10.5 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1300 Aneroid pressure h: 700 : 82.0...84.0 Del.quantity 1000 : (80.0...86.0) Spread cm3 : 3.50 1000 : (6.00)RATED SPEED

BEGINNING C: DELIVERY

Prestroke mm

Test pressure, bar: 30...32

Rack travel in mm: 19...21

: 3.65...3.75 : (3.6...3.8)

1st version Del.quantity cm3/: 75.0...78.0 Control Lever 1000 s: (72.5...80.5) position degrees: 109...117 cm3 : 5.00 Spread 1000 s: (7.00) Testina: Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/ : 46.0...48.0 1000 s: (44.0...50.0) 1st rack travel in: 10.7 rpm : 1340...1350 Speed 2nd rack travel in: 4.00 Speed rpm : 1405...1435 4th rack travel in: 1550 Speed rpm : 0.00...1.00**BREAKAWAY** LOW IDLE 1 1st version Control lever 1mm rack travel less than position degrees: 69...77 full load rack tr: 11.70 Testing: rpm : 1340...1350 Speed Speed : 200 rpm Minimum rack trave: 9.5 STARTING FUEL DELIVERY Speed rpm : 300 Rack travel in mm : 7.75...7.95 Rack travel in mm: 2.0 Speed rom : 100 Speed rpm : 495...555 Del.quantity cm3/: 78.0...88.0 1000 s: (75.0...91.0) Aneroid/Altitude Compensator Test LOW IDLE Speed rpm : 300 Rack travel in mm : 7.75...7.95 1st version Setting Del.quantity cm3/: 10.0...14.0 Speed rpm : 500 1000 s: (7.5...16.5) Pressure hPa : 700 cm3 : 3.50Spread Rack travel mm : 13.4...13.5 1000 s: (5.50) Measurement Remarks: Speed $1/\min : 500$: NB #0240742702 1st pressure hPa : -Rack travel in m: 12.1...12.2 2nd pressure hPa : 150 Rack travel in m: 12.55...12.75 3rd pressure hPa : 210 Rack travel in m: 12.95...13.15 START CUT-OUT Speed 1/min : 200 (230) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 700 Speed rpm : 1300 Del.quantity cm3/ : 82.0...84.0 1000 s: (80.0...86.0) cm3 : 3.50 Spread 1000 s: (6.00) Aneroid pressure h: 700 Speed rpm : 600

BOSCH INJ. PUMP TEST SPECIFICATIONS Firing order : 1- 3- 4- 2 Note remarks Test sheet : MB Phasing : 0-90-180-270 Edition : 15.02.94 Replaces Tolerance $+ - \circ : 0.50 (0.75)$ Test oil : ISO-4113 BASIC SETTING Combination no. : 0 403 444 153 1st speed rom : 1300Injection pump Pump designation : PES4MW100/720RS1127 Rack travel in mm : 11.1...11.2 EP type number : 0 413 404 103 Governor Del.quantity cm3/: 8.0...8.2 Governor design. : RQV300...1300MW48-3 : 0 420 083 110 Governer no. Customer-spec. information Spread Customer : MB Engine : 0M364A 2nd speed 1st version kW : 85 Rated speed : 2600 TEST BENCH REQUIREMENTS Spread Test oil inlet temp. °C : 38...42 with governor Overflow valve : 1 417 413 047 GUIDE SLEEVE TRAVEL 1st speed Inlet press., bar: 1.50 travel mm 2nd speed Test nozzle holder travel mm assembly : 0 681 343 009 3rd speed travel mm Openina 4th speed pressure, bar : 172...175 travel mm GUIDE SLEEVE POSITION Test Lines : 1 680 750 015 Control-lever position Degree: -1 Outside diameter Speed x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses 1st version Set equal delivery quant. Speed per values Del.quantity BEGINNING OF DELIVERY Spread cm3 Test pressure, bar: 30...32 Prestroke mm : 3.7...3.8 RATED SPEED : (3.65...3.85) Rack travel in mm: 9...12

100 s: (7.8...8.4) cm3 : 0.3100 s: (0.6) rpm : 300.0Rack travel in mm: 7.8...7.9 Del.quaritity cm3/: 0.9...1.3 100 s: (0.7...1.6) cm3 : 0.3100 s: (0.5) (B) Setting of injection pump rpm : 300 : 1.15...1.65 rpm : 363 : 1.8...2.3 rpm : 490 : 2.68...3.18 **rpm** : 1345 : 8.34...8.84 rpm : 1330 Rack travel in mm : 15.2...17.8 FULL LOAD DELIV. AT FULL LOAD STOP rpm : 1300 : 80.0...82.0 1000 : (78.0...84.0) : 3.50 1000 ; (6.00) 1st version

Control lever position degrees: 108...116 Testina: 1st rack travel in: 10.1 rpm : 1340...1350 Speed 2nd rack travel in: 4.00 Speed rpm : 1430...1460 4th rack travel in: 1550 Speed rpm : 0.00...1.00 LOW IDLE 1 Control lever position degrees: 75...83 Testing: Speed : 200 rpm Minimum rack trave: 9.5 Speed rpm : 300 Rack travel in mm : 7.8...7.9 START CUT-OUT 1/min : 230 (250) Speed FUEL DELIVERY CHARACTERISTICS 1st version Speed rom : 1300 Del.quantity cm3/: 80.0...82.0 1000 s: (78.0...84.0) Spread cm3 : 3.501000 s: (6.00) Speed rpm : 750
Del.quantity cm3/: 76.0...78.0
1000 s: (74.0...80.0) cm3 : 5.00 Spread 1000 s: (7.00) Speed rpm : 585 Del.quantity cm3/: 71.5...74.5 1000 s: (69.0...77.0) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 10.1 rpm : 1340...1350 Speed STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 78.0...88.0 1000 s: (75.0...91.0) LOW IDLE

Speed rpm : 300
Rack travel in mm : 7.8...7.9
Del.quantity cm3/ : 9.0...13.0
1000 s: (7.0...15.0)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Note remarks

Test sheet

Edition

: 10.02.94

Replaces

Test oil

: ISO-4113

Combination no. : 0 403 446 320

Injection pump

Pump designation : PES6MW100/720RS1131

EP type number

: 0 413 406 123

Governor

Governor design. : RQV300...1300MW67-8

Governer no.

: 0 420 083 290

Customer

Customer-spec. information : MB-NFZ

Engine

: OM 366 A

1st version kW

: 121.0

Rated speed

: 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C

: 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly

: 0 681 343 009

Openina

pressure, bar : 172...175

Test Lines : 1 680 715 089

Outside diameter

x Wall thickness

: 8.00X2.50X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

per values ___

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

: 3.70...3.80

Prestroke mm

: (3.65...3.85)

Rack travel in mm : 9.00...12.00

: 1-5-3-6-2-4 Firing order

Phasing

: 0-60-120-180-240-300

Tolerance + - °

: 0.50 (0.75)

BASIC SETTING

1st speed

rpm: 1300

Rack travel in mm : 10.50...10.60

Del.quantity cm3/: 8.8...9.0

100 s: (8.6...9.2)

cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0 Rack travel in mm : 5.4...5.6 Del.quantity cm3/: 1.0...1.4

100 s: (0.7...1.6)

Spread

Spread

cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

1st speed

rpm : 1450

travel mm

: 9.50...9.90

2nd speed

rpm : 1350

travel mm

: 8.60...8.80

3rd speed

rpm : 500

travel mm

: 2.70...3.30

4th speed

: 300 rom

travel mm

: 1.20...1.60

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

rom : 1300

Aneroid pressure h: 700

: 88.0...90.0

Del.quantity

1000 : (86.0...92.0)

cm3

: 3.50

Spread

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 109...117

Testina:

1st rack travel in: 9.50

Speed rpm : 1340...1350 2nd rack travel in: 4.00 rpm : 1415...1445 Speed 4th rack travel in: 1550 Speed rpm : 0.00...1.00 LOW IDLE 1 Control lever position degrees: 64...72 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 5.5 Testing: Speed rpm : 200 Minimum rack trave: 7.00 rpm : 300 Rack travel in mm : 5.40...5.60 Ameroid/Attitude Compensator Test 1st version Settina Speed : 500 rpm hPa : 700 Pressure Rack travel mm : 11.20...11.40 Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 9.20...9.30 2nd pressure hPa : 300 Rack travel in m: 9.70...9.90 3rd pressure hPa : 400 Rack travel in m: 10.40...10.60 START CUT-OUT Speed 1/min : 220 (240) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 700 rpm : 1300 Del.quantity cm3/: 88.0...90.0 1000 s: (86.0...92.0) cm3 : 5.00 Spread 1000 s: (7.0) Aneroid pressure h: 700 Speed rpm : 850 Del.quantity cm3/: 88.0...91.0 1000 s: (85.5...93.5) Spread cm3 : 5.00 1000 s: (7.00) Aneroid pressure h: -

Speed rpm : 500 Del.quantity cm3/ : 49.0...51.0 1000 s: (47.0...53.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 9.50 Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 80.0...90.0 1000 s: (77.0...93.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.40...5.60
Del.quantity cm3/ : 10.0...14.0
1000 s: (7.5...16.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

Note remarks

Test sheet

: MB

Edition

: 15.02.94

Replaces

Test oil

: ISO-4113

Combination no. : 0 403 446 321

Injection pump

Pump designation : PES6MW100/720RS1131

EP type number

: 0 413 406 123

Governor

Governor design. : RQV300...1300MW50-31

Governer no.

: 0 420 083 294

Customer

Customer-spec. information : MB-NFZ

Engine

: OM 366 A

1st version kW

: 121.0

Rated speed

: 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C

: 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly

: 0 681 343 009

Opening.

pressure, bar

: 172...175

Test lines

: 1 680 715 089

Outside diameter

x Wall thickness

x Length mm

: 8.00X2.50X600

(A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm

: 3.70...3.80 : (3.65...3.85)

Rack travel in mm : 9.00...12.00

CO8

Firing order

: 1-5-3-6-2-4

Phasing

: 0-60-120-180-240-300

Tolerance + - °

: 0.50 (0.75)

BASIC SETTING

1st speed

rpm : 1300

Rack travel in mm: 10.50...10.60

Dei.quantity cm3/: 8.8...9.0

100 s: (8.6...9.2)

Spread

Spread

cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 300.0

Rack travel in mm: 5.4...5.6 Del.quantity cm3/: 1.0...1.4

100 s: (0.7...1.6)

cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

rpm : 300 1st speed

: 1.15...1.65 travel mm

rpm : 510 2nd speed

travel mm : 4.03...4.53

3rd speed rpm : 710

travel mm : 4.91...5.41

rpm : 1354 4th speed

travel inn : 8.03...8.43

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

rpm : 1300 Speed

Aneroid pressure h: 700

: 88.0...90.0 Del.quantity

1000 : (86.0...92.0) : 3.50

cm3 Spread

1000 : (6.00)

RATED SPEED

1st version

Control lever

position degrees: 116...124

Testing:

1st rack travel in: 9.50

rpm : 1340...1350 Speed 2nd rack travel in: 4.00 rpm : 1425...1455 Speed 4th rack travel in: 1550 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 84...92 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 5.5 Testing: : 200 Speed ngn Minimum rack trave: 7.00 Speed rpm : 300 Rack travel in mm : 5.40...5.60 Aneroid/Altitude Compensator Test 1st version Setting rom : 500 hPa : 700 Speed man Pressure Rack travel mm : 11.20...11.40 Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 9.20...9.30 2nd pressure hPa : 300 Rack travel in m: 9.70...9.90 3rd pressure hPa : 400 Rack travel in m: 10.40...10.60 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 700 rpm : 1300 Speed Del.quantity cm3/: 88.0...90.0 1000 s: (86.0...92.0) cm3 : 5.00Spread 1000 s: (7.0) Aneroid pressure h: 700 Speed : 850 rpm Del.quantity cm3/: 88.0...91.0 1000 s: (85.5...93.5) cm3 : 5.00 Spread 1000 s: (7.00) Aneroid pressure h: -

Speed rpm : 500 Del.quantity cm3/: 49.0...51.0 1000 s: (47.0...53.9)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 9.50 Speed rpm : 1340...1350

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/: 80.0...90.0

1000 s: (77.0...93.0)

LOW IDLE

Speed rpm : 300
Rack travel in mm : 5.40...5.60
Del.quantity cm3/ : 10.0...14.0
1000 s: (7.5...16.5)
Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

009

Note remarks

Test sheet

Edition

: 15.02.94

Replaces

Test oil

: ISO-4113

Combination no.

: 0 403 446 324

Injection pump

Pump designation : PES6MW100/720RS1131-

EP type number

: 0 413 406 165

Governor

Governor design. : RQV300...1300MW136

Governer no.

: 0 420 083 300

Customer

Customer-spec. information : MB-NFZ

Engine

: OM 366 LA

1st version kW

: 177.0

Rated speed

: 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C

: 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly

: 0 681 343 009

Opening.

pressure, bar

: 172...175

Test lines

: 1 680 715 089

Outside diameter

x Wall thickness

x Length mm

: 8.00x2.50x600

(A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm

: 3.6...3.7

: (3.55...3.75)

Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

Phasing

: 0-60-120-180-240-300

Tolerance + - *

: 0.50 (0.75)

BASIC SETTING

1st speed

rpm : 1300

Rack travel in mm : 14.4...14.5

Del.quantity cm3/: 11.4...11.6

100 s: (11.2...11.8)

Spread

cm3 : 0.3

100 s: (0.6)

2nd speed

rpm : 300.0

Rack travel in mm: 6.5...6.7

Del.quantity cm3/: 1.0...1.4

Spread

100 s: (0.7...1.6) cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 300

: 0.89...1.39 travel mm

2nd speed rpm : 578

: 4.46...4.96 travel mm rpm : 640

3rd speed travel mm

: 4.85...5.35

4th speed

rpm : 1355

travel mm

: 9.93...10.43

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

rpm : 1300

Aneroid pressure h: 1000 Del.quantity

: 114.0...116.0 1000 : (112.0...118.0)

cm3 : 3.50

1000 : (6.00)

RATED SPEED

Spread

1st version

Control lever

position degrees: 110...118

Testing:

C10

1st rack travel in: 13.4 rpm : 1340...1350 Speed 2nd rack travel in: 4.00 rpm : 1445...1475 Speed 4th rack travel in: 1550 Speed rpm: 0.00...1.00 LOW IDLE 1 Control lever position degrees: 65...73 Setting point w/out bumper spring rpm : 300 Rack travel in mm : 6.6 Testing: Speed rpm : 200 Minimum rack trave: 8.00 rpm : 300 Rack travel in mm: 6.5...6.7 Aneroid/Altitude Compensator Test 1st version Settina Speed rpm : 500 hPa : 1000 Pressure Rack travel mm : 14.4...14.5 Measurement 1/min : 500 Speed 1st pressure hPa : -Rack travel in m: 10.95...11.05 2nd pressure hPa : 200 Rack travel in m: 11.25...11.45 3rd pressure hPa : 500 Rack travel in m: 13.95...14.15 START CUT-OUT 1/min : 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 rpm : 1300 Del.quantity cm3/: 114.0...116.0 1000 s: (112.0...118.0) Spread cm3 : 3.50 1000 s: (6.0) Aneroid pressure h: 1000 Speed rpm : 750
Del.quantity cm3/ : 104.5...107.5
1000 s: (102.0...110.0) Spread cm3 : 5.001000 s: (7.00)

Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/: 41.0...43.0 1000 s: (39.0...43.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 13.4 rpm : 1340...1350 Speed STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/: 100.0...110.0 1000 s: (97.0...113.0) LOW IDLE Speed rpm : 300 Rack travel in mm : 6.5...6.7 Del.quantity cm3/: 10.0...14.0 1000 s: (7.5...16.5) cm3 : 3.50 Spread 1000 s: (5.50) Remarks:

Note remarks

Test sheet : MAN 7,20 Edition : 16.02.94 Replaces : 04.89 Test oil : ISO-4113

Combination no. : 0 403 456 104

Injection pump

Pump designation : PES6MW100/321RS1180

EP type number : 0 413 405 163

Governor

Governor design: RQ250/1200Mw84-1 : 0 420 082 037 Governer no.

Customer-spec. information Customer : MAN

Engine : D 0826 LUH

1st version kW : 157.0 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Openina

pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60 : (3.45...3.65) Rack travel in mm : 15.00...0.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1000

Rack travel in mm : 11.6...11.7

Del.quantity cm3/: 12.6...12.8

100 s: (12.3...13.1)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0 Rack travel in mm : 5.2...5.4 Del.quantity cm3/: 1.8...2.2

100 s: (1.55...2.45)

Spread cm3 : 0.3100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1320 travel mm : 8.6...9.0 2nd speed rpm : 1260: 6.5...6.7 travel mm 3rd speed : 350 **CDM** : 3.4...4.0 : 250 travel mm 4th speed rpm travel mm : 1.5...2.1

GUIDE SLEEVE POSITION Control-lever position

Degree: 108...110

rpm : 600

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000 Aneroid pressure h: 1000

Del.quantity : 126.0...128.0 1000 : (123.0...131.0)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED cm3 : 4.00 1000 s: (7.5) Spread 1st version Aneroid pressure h: 1000 Control lever : 600 Speed rpm Del.quantity cm3/: 123.0...127.0 position degrees: 26...34 1000 s: (120.0...130.0) Setting point: cm3 : 6.00Spread Speed : 600 1000 s: (9.00) rpm Rack travel in mm: 20.0 Aneroid pressure h: 1000 rpm : 800 Speed Del.quantity cm3/: 125.0...129.0 1000 s: (122.0...132.0) Testing: 1st rack travel in: 10.6 Speed rpm : 1245...1260 Aneroid pressure h: -2nd rack travel in: 4.00 Speed rpm : 500 Del.quantity cm3/ : 74.0...76.0 Speed rpm : 1305...1335 4th rack travel in: 1450 1000 s: (72.0...78.0) Speed rpm : 0.00...1.00LOW IDLE 1 **EREAKAWAY** Control lever position degrees: 6...14 1st version Setting point w/out bumper spring 1mm rack travel less than rpm : 250 Rack travel in mm: 5.3 full load rack tr: 10.6 Speed rpm : 1245...1260 Testing: rpm : 100 Speed STARTING FUEL DELIVERY Minimum rack trave: 7.3 rpm : 250 Rack travel in mm: 5.2...5.4 rpm : 100 Speed Del.quantity cm3/: 130.0...140.0 Ameroid/Altitude 1000 s: (127.0...143.0) Compensator Test LOW IDLE 1st version Speed rpm : 250 Rack travel in mm : 5.2...5.4 Settina rpm : 500 hPa : 1000 Speed man Del.quantity cm3/: 18.0...22.0 Pressure 1000 s: (15.5...24.5) Rack travel mm : 11.6...11.7 cm3 : 3.50 Spread 1000 s: (5.50) Measurement 1/min: 500 Speed Remarks: : MAN #2-7986 1st pressure hPa : -Rack travel in m: 9.30...9.40 2nd pressure hPa : 200 Rack travel in m: 9.6...9.7 3rd pressure hPa : 400 Rack travel in m: 10.9...11.2 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 rpm : 1000 Speed Del.quantity cm3/: 126.0...128.0 1000 s: (123.0...131.0)

Note remarks

Test sheet : MAN 7,2 Q Edition : 16.02.94 Replaces : 11.89

Test oil : ISO-4113

Combination no. : 0 403 456 105

Injection pump

Pump designation : PES6MW100/321RS1186

EP type number : 0 413 406 168

Governor

Governor design: RQ250/1200MW84-2 : 0 420 082 040 Governer no.

Customer-spec. information Customer : MAN

Engine : D 0826 LUH

1st version kW : 157.0 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Openina

pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter

x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60

: (3.45...3.65)

Rack travel in mm : 15.00...0.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rom : 1000

Rack travel in mm : 14.7...14.8

Del.guantity cm3/: 12.6...12.8

100 s: (12.3...13.1)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0Rack travel in mm: 5.4...5.6 Del.quantity cm3/: 1.9...2.3

100 s: (1.65...2.55)

cm3 : 0.3Spread 100 s: (0.5)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

rpm : 1280 1st speed : 9.5...9.9 travel mm rpm : 1250 2nd speed : 7.5...7.7 travel mm

: 350 3rd speed man.

: 5.2...5.8 : 250 travel mm 4th speed rpm

travel mm : 2.3...2.7

GUIDE SLEEVE POSITION

Control-lever position

Degree: 108...110 rpm : 600

Rack travel in mm : 14.7...16.3

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000 Aneroid pressure h: 1000

Del.quantity : 126.0...128.0

1000 : (123.0...131.0)

Spread cm3 : 4.00

1000 : (7.50)

C14

RATED SPEED cm3 : 4.00Spread 1000 s: (7.5) 1st version Aneroid pressure h: 1000 Control lever : 600 rpm position degrees: 38...46 Del.quantity cm3/: 126.0...130.0 1000 s: (123.0...133.0) Setting point: Spread cm3 : 6.00: 600 Speed rom 1000 s: (9.00) Rack travel in mm: 15.5 Aneroid pressure h: 1000 : 800 besed LK-ID Testing: Del.quantity cm3/: 126.0...130.0 1000 s: (123.0...133.0) 1st rack travel in: 13.8 rpm : 1245...1260 Speed Aneroid pressure h: 2nd rack travel in: 4.00 rpm : 500 Speed : 1285...1315 Speed rom Del.quantity cm3/: 74.0...76.0 4th rack travel in: 1450 1000 s: (72.0...78.0) Speed rpm : 0.00...1.00LOW IDLE 1 **BREAKAWAY** Control lever position degrees: 8...16 1st version Setting point w/out bumper spring 1mm rack travel less than rpm : 250 Rack travel in mm: 5.5 full load rack tr: 13.8 Speed rpm : 1245...1260 Testing: Speed rpm : 100 STARTING FUEL DELIVERY Minimum rack trave: 7.5 Speed חכרו Rack travel in mm: 5.4...5.6 Speed : 100 rom Del.quantity cm3/: 130.0...140.0 1000 s: (127.0...143.0) Aneroid/Altitude Compensator Test LOW IDLE 1st version Speed rpm Setting Rack travel in mm: 5.4...5.6 Speed : 500 Del.quantity cm3/: 19.0...23.0 rom hPa : 1000 Pressure 1000 s: (16.5...25.5) Rack travel mm : 14.8...14.9 cm3 : 3.50 Spread 1000 s: (5.50) Measurement 1/min: 500 Speed Remarks: : MAN #3-7008 1st pressure hPa : -Rack travel in m: 12.2...12.3 2nd pressure hPa : 200 Rack travel in m: 12.7...12.8 3rd pressure hPa : 400 Rack travel in m: 13.8...14.1 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 : 1000 Speed חסח Del.quantity cm3/: 126.0...128.0

1000 s: (123.0...131.0)

Note remarks

Test sheet : MAN 7,2 R
Edition : 16.02.94
Replaces : 11.89
Test oil : ISO-4113

Combination no. : 0 403 456 106

Injection pump

Pump designation : PES6MW100/321RS1190

EP type number : 0 413 406 176

Governor

Governor design. : RQ250/1300MW84 Governer no. : 0 420 082 029

Customer-spec. information Customer : MAN

Engine : D 0826 LF

1st version kW : 165.0 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test rozzle holder

assembly : 0 681 343 009

Opening |

pressure, bar : 172...175

Test Lines : 1 680 750 008

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values ___

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.25...3.35 : (3.2...3.4)

Rack travel in mm : 15.00...0.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance $+ - \circ : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1000

Rack travel in mm : 14.9...15.0

Del.quantity cm3/: 13.3...13.5

100 s: (13.0...13.8)

Spread cm3: 0.4

100 s: (0.7)

2nd speed rpm : 250.0
Rack travel in mm : 5.4...5.6
Del.quantity cm3/: 1.9...2.3

100 s: (1.65...2.55) cm3 : 0.3

Spread cm3 : 0.3 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

rpm : 1440 1st speed : 8.7...9.1 travel mm rpm : 1360 2nd speed : 6.3...6.5 travel mm 3rd speed rpm : 380 : 4.1...4.7 travel mm : 250 4th speed mq: : 1.5...1.9 travel mm

GUIDE SLEEVE POSITION Control-lever position

Degree: 108...110

Speed rpm : 600 Rack travel in mm : 19.2...20.8

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Spread

Speed rpm : 1000 Aneroid pressure h: 1000

Del.quantity : 133.0...135.0 1000 : (130.0...138.0)

cm3 : 4.00

1000 : (7.50)

RATED SPEED Spread cm3 : 4.001000 s: (7.5) 1st version Aneroid pressure h: 1000 Control lever Speed rpm : 600 Del.quantity cm3/ : 132.0...136.0 position degrees: 33...37 1000 s: (129.0...139.0) Setting point: cm3 : 6.00Spread Speed mc : 600 1000 s: (9.00) Rack travel in mm: 20 Aneroid pressure h: 1000 : 800 rpm Testing: Del.quantity cm3/: 133.0...137.0 1st rack travel in: 13.9 1000 s: (130.0...140.0) rpm : 1345...1360 Aneroid pressure h: -2nd rack travel in: 4.00 Speed rpm : 500 Del.quantity cm3/ : 74.0...75.0 rpm : 1450...1480 Speed 4th rack travel in: 1530 1000 s: (72.0...78.0) rpm : 0.00...1.00Speed LOW IDLE 1 BREAKAWAY Control lever position degrees: 7...15 1st version Setting point w/out bumper spring 1mm rack travel less than rpm : 250 Rack travel in mm: 5.5 full load rack tr: 13.9 rpm : 1345...1360 Speed Testing: Speed rpm : 100 Minimum rack trave: 7.0 STARTING FUEL DELIVERY rpm : 250 Rack travel in mm: 5.4...5.6 Speed rpm : 100 Del.quantity cm3/: 130.0...140.0 Aneroid/Altitude 1000 s: (127.0...143.0) Compensator Test LOW IDLE 1st version Speed rpm : 250 Setting Rack travel in mm: 5.4...5.6 : 500 Del.quantity cm3/: 19.0...23.0 Speed mon hPa : 1000 Pressure 1000 s: (16.5...25.5) Rack travel mm : 14.9...15.0 cm3 : 3.50 Spread 1000 s: (5.50) Measurement 1/min: 500 Speed Remarks: : MAN #3-7020 1st pressure hPa : -Rack travel in m: 11.9...12.0 2nd pressure hPa : 180 Rack travel in m: 12.6...12.7 3rd pressure hPa : 385 Rack travel in m: 13.7...14.0 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed rpm : 1000 Del.quantity cm3/ : 133.0...135.0 1000 s: (131.0...138.0)

Note remarks

Test sheet : MAN 7,2 V Edition : 16.02.94 : 11.91 Replaces Test oil : ISO-411

Combination no. : 0 403 456 110

Injection pump

Pump designation : PES6MW100/321RS1201

EP type number : 0 413 406 190

Governor

Governor design. : RQ250/1200Mw84-3 Governer no. : 0 420 082 043

Customer-spec. information Customer : MAN

Engine : D 0826 LF02

1st version kW : 169.0 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.5...3.6

: (3.45...3.65)

Rack travel in mm : 15.00...0.00

: 1-5-3-6-2-4 Firing order

: 0-60-120-180-240-300 Phasing

: 0.50 (0.75) Tolerance + - *

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 800

Rack travel in mm : 12.8...12.9

Del.quantity cm3/: 14.1...14.3

100 s: (13.8...14.6)

Spread cm3 : 0.4

100 s: (0.7)

rpm : 250.02nd speed Rack travel in mm: 5.4...5.6 Del.quantity cm3/: 1.8...2.0 100 s: (1.75...2.45)

Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

rpm : 1300 1st speed travel mm : 8.4...8.8 2nd speed rpm : 1260 travel mm : 6.6...6.8 3rd speed rpm : 345 : 4.0...4.6 travel mm

rpm : 250 4th speed travel mm : 1.8...2.2

GUIDE SLEEVE POSITION

Control-lever position Degree: 108...110

Speed rpm : 600

Rack travel in mm : 18.2...19.8

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800 Aneroid pressure h: 1000

Del.quantity : 141.0...143.0

1000 : (138.0...146.0)

: 4.00 Spread cm3

1000 : (7.50)

RATED SPEED cm3 : 4.00Spread 1000 s: (7.5) 1st version Aneroid pressure h: 1000 Control Lever : 600 Speed ממח Del.quantity cm3/: 139.0...143.0 1000 s: (136.0...146.0) position degrees: 92...100 Setting point: cm3 : 6.00Spread rpm : 600 Speed 1000 s: (9.00) Rack travel in mm: 19 Aneroid pressure h: 1000 Speed rpm : 1200 Del.quantity cm3/ : 136.0...140.0 Testing: 1st rack travel in: 11.3 1000 s: (133.0...143.0) rpm : 1245...1260 Speed Aneroid pressure h: -2nd rack travel in: 4.00 rpm : 500 Speed rpm : 1290...1330 Speed Del.quantity cm3/: 74.0...76.0 4th rack travel in: 1400 1000 s: (72.0...78.0) : 0.00...1.00 Speed rom LOW IDLE 1 BREAKAWAY Control lever position degrees: 69...77 1st version Setting point w/out bumper spring 1mm rack travel less than rpm : 250 Rack travel in mm : 5.5 full load rack tr: 11.3 Speed rpm : 1245...1260 Testina: Speed : 100 rpm STARTING FUEL DELIVERY Minimum rack trave: 7.0 Speed rpm: 250
Rack travel in mm: 5.4...5.6 : 100 Speed man Del.quantity cm3/: 60.0...80.0 Aneroid/Altitude 1000 s: (57.0...83.0) Compensator Test LOW IDLE 1st version Speed rpm : 250 Setting Rack travel in mm: 5.4...5.6 Speed : 500 Del.quantity cm3/: 16.0...20.0 morn 1000 s: (13.5...22.5) cm3 : 3.50 Pressure hPa : 1000 : 12.65...12.95 Rack travel mm Spread 1000 s: (5.50) Measurement 1/min: 500 Speed Remarks: : MAN #3-7035 1st pressure hPa : -Rack travel in m: 10.0...10.1 2nd pressure hPa : 155 Rack travel in m: 10.3...10.4 3rd pressure hPa : 550 Rack travel in m: 11.9...12.2 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 : 800 CDM Del.quantity cm3/: 141.0...143.0 1000 s: (138.0...146.0)

Note remarks

Test sheet : MAN 7,2 Q
Edition : 16.02.94
Replaces : 08.91
Test oil : ISO-4113

combination no. : 0 403 456 111

Injection pump

Pump designation : PES6MW100/321RS1186

EP type number : 0 413 406 186

Governor:

Governor design. : RQ250/1200MW84-4 Governor no. : 0 420 082 044

Customer—spec. information Customer : M4N

Engine : D 0826 LUH

1st version kW : 157.0 Rated speed : 2400

TEST MENCH REQUIREMENTS

Test oil

inlet temp. *C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter x Wall thickness

 \times Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.5...3.6 : (3.45...3.65)

Rack travel in mm : 15.00...0.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1000

Rack cravel in mm: 12.7...12.8

Del.quantity cm3/: 13.3...13.5

100 s: (13.0...13.8)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0 Rack travel in mm : 5.5...5.7 Del.quantity cm3/ : 1.9...2.3

100 s: (1.65...2.35)

Spread cm3 : 0.3 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1280 travel mm : 9.5...9.9 2nd speed rpm : 1250 travel mm : 7.5...7.7 3rd speed rpm : 350 travel mm : 5.2...5.8 4th speed rpm : 250

GUIDE SLEEVE POSITION Control-lever position

Degree: 108...110

: 2.2...2.6

Speed rpm: 600 Rack travel in mm: 14.7...16.3

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

travel mm

Speed rpm: 1000 Aneroid pressure h: 1000

Del.quantity : 133.0...135.0 1000 : (130.0...138.0)

Spread cm3 : 4.00

1000 : (7.50)

1000 s: (7.5) 1st version Aneroid pressure h: 1000 Control lever Speed : 600 rrim position degrees: 104...112 Del.quantity cm3/: 131.5...135.5 1000 s: (128.5...138.5) Setting point: Spread cm3 : 6.00: 600 1000 s: (9.00) Speed CDM Rack travel in mm: 15.5 Aneroid pressure h: 1000 Speed rpm : 1200 Del.quantity cm3/: 129.5...133.5 1000 s: (126.5...136.5) Testing: 1st rack travel in: 11.5 rpm : 1245...1260 Speed Aneroid pressure h: -2nd rack travel in: 4.00 rpm : 500 Speed Speed rpm : 1290...1330 4th rack travel in: 1400 Del.quantity cm3/: 74.0...76.0 1000 s: (72.0...78.0) rpm : 0.00...1.00Speed LOW IDLE 1 **BREAKAWAY** Control lever position degrees: 70...78 1st version Setting point w/out bumper spring 1mm rack travel less than rpm : 250 Speed Rack travel in mm: 5.6 full load rack tr: 11.5 rpm : 1245...1260 Speed Testing: Speed : 100 rpm STARTING FUEL DELIVERY Minimum rack trave: 7.0 Speed rpm : 250 Rack travel in mm: 5.5...5.7 Speed **ma** : 100 Del.quantity cm3/: 70.0...90.0 Aneroid/Altitude 1000 s: (67.0...93.0) Compensator Test LOW IDLE 1st version Speed rpm : 250 Setting Rack travel in mm: 5.5...5.7 Speed : 500 Del.quantity cm3/: 19.0...23.0 man. Pressure hPa : 1000 1000 s: (16.5...25.5) Rack travel mm : 12.8...12.9 cm3 : 3.50Spread 1000 s: (5.50) Measurement $1/\min : 500$ Speed Remarks: : MAN #3-7008 1st pressure hPa : -Rack travel in m: 10.0...10.1 2nd pressure hPa : 200
Rack travel in m: 10.3...10.4
3rd pressure hPa : 500 Rack travel in m: 12.0...12.3 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 rpm : 1000 Speed Del.quantity cm3/: 133.0...135.0 1000 s: (130.0...138.0)

cm3 : 4.00

Spread

RATED SPEED

Note remarks

Test sheet : MAN 7,3 A
Edition : 16.02.94
Replaces : 08.91
Test oil : ISO-4113

Combination no. : 0 403 456 112

Injection pump

Pump designation : PES6MW100/321RS1190

EP type number : 0 413 406 176

Governor

Governor design. : RQ250/1100MW84-5 Governer no. : 0 420 082 046

Customer—spec. information Customer : MAN

Engine : D 0826 L0H05

1st version kW : 150.0 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.25...3.35

: (3.2...3.4)

Rack travel in mm : 15.00...0.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance $+ - ^{\circ} : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 800

Rack travel in mm : 14.7...14.8

Del.quantity cm3/: 13.2...13.4

100 s: (12.9...13.7)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0 Rack travel in mm : 5.4...5.6 Del.quantity cm3/ : 1.9...2.3

100 s: (1.65...2.35)

Spread cm3 : 0.3 100 s: (0.5)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1200 travel mm : 9.3...9.7 2nd speed rpm : 1100 travel mm : 7.3...7.5 3rd speed rpm : 470 travel mm : 6.7...7.3

4th speed rpm : 250 travel mm : 1.4...1.8

GUIDE SLEEVE POSITION Control-lever position

Degree: 108...110

Speed rpm: 600

Rack travel in mm : 16.0...17.8

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm: 800

Aneroid pressure h: 1000
Del.guantity : 132.0

Del.quantity : 132.0...134.0 1000 : (129.0...137.0)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED Spread cm3 : 4.00 1000 s: (7.5) 1st version Aneroid pressure h: 1000 Speed rpm : 600 Del.quantity cm3/ : 130.5...134.5 control lever position degrees: 96...104 1000 s: (127.5...137.5) Setting point: Spread cm3 : 6.00 1000 s: (9.00) rpm : 600 Rack travel in mm: 16.9 Aneroid pressure h: 1000 Speed rpm : 1100 Del.quantity cm3/: 131.0...138.0 1000 s: (128.0...138.0) Testing: 1st rack travel in: 13.7 Speed rpm : 1145...1160 Aneroid pressure h: -2nd rack travel in: 4.00 rpm : 500 Speed Del.quantity cm3/: 74.0...76.0 rpm : 1190...1220 Speed 4th rack travel in: 1250 1000 s: (72.0...78.0) Speed rpm : 0.00...1.00LOW IDLE 1 **BREAKAWAY** Control lever position degrees: 67...75 1st version Setting point w/out bumper spring 1mm rack travel less than Speed rpm : 250 Rack travel in mm : 5.5 full load rack tr: 13.7 rpm : 1145...1160 Speed Testing: Speed rpm : 100 STARTING FUEL DELIVERY Minimum rack trave: 7.0 rpm : 250 Rack travel in mm: 5.4...5.6 rpm : 100 Speed Del.quaratity cm3/: 70.0...90.0 1000 s: (67.0...93.0) Aneroid/Altitude Compensator Test LOW IDLE 1st version Speed rpm : 250 Setting Rack travel in mm: 5.4...5.6 : 500 Speed rom Del.quantity cm3/: 19.0...23.0 hPa : 1000 Pressure 1000 s: (16.5...25.5) Rack travel mm : 14.7...14.9 cm3 : 3.50 Spread 1000 s: (5.50) Measurement Speed $1/\min : 500$ Remarks: : MAN #3-7115 1st pressure hPa : -Rack travel in m: 12.0...12.1 2nd pressure hPa : 250 Rack travel in m: 12.6...12.7 3rd pressure hPa : 450 Rack travel in m: 13.75...13.95 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 rpm : 800 Speed Del.quantity cm3/: 132.0...134.0 1000 s: (129.0.,.137.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : MAN 7,3 C Test sheet Edition : 16.02.94 : 06.91 Replaces Test oil : ISO-4113 Combination no. : 0 403 456 113 Injection pump Pump designation : PES6MW100/321RS1210 EP type number : 0 413 406 201 Governor Governor design. : RQ250/1050MW84-6 : 0 420 082 049 Governer no. Customer-spec, information : MAN Customer Engine : D 0826 LUH250 1st version kW : 184.0 : 2100 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 419 992 198 Inlet press., bar: 1.50 Test nozzle holder : 0 681 343 009 assembly Opening pressure, bar : 172...175 Test lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values BEGINNING OF DELIVERY Test pressure, bar: 30...32 : 3.5...3.6 Prestroke mm : (3.3.45...3.65) Rack travel in mm: 9.0...12.0 C24

Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance $+ - ^{\circ} : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 800 Rack travel in mm : 14.0...14.1 Del.quantity cm3/: 16.1...16.3 100 s: (15.8...16.6) cm3 : 0.4Spread 100 s: (0.7) rpm : 250.0 2nd speed Rack travel in mm: 4.9...5.1 Del.quantity cm3/: 1.3...1.7 100 s: (1.05...1.95) cm3 : 0.3Spread 100 s: (0.5) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 1125 : 7.3...7.7 travel mm rpm : 1050 2nd speed travel mm : 6.1...6.3 rpm : 400 3rd speed : 5.7...6.3 travel mm rpm : 250 4th speed : 2.5...2.9 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: 108...110 rpm : 600 Rack travel in mm : 19.2...20.8 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 800 Aneroid pressure h: 1100 : 161.0...163.0 Del.quantity 1000 : (158.0...166.0) : 4.00 Spread cm3

1000 : (7.50)

RATED SPEED cm3 : 4.00Spread 1000 s: (7.5) 1st version Aneroid pressure h: 1100 Control lever Speed : 600 rpm position degrees: 95...103 Del.quantity cm3/: 161.5...165.5 1000 s: (158.5...168.5) Setting point: Spread cm3 : 6.00 : 600 Speed rpm 1000 s: (9.00) Rack travel in mm: 20.0 Aneroid pressure h: 1100 Speed rpm : 1050 Del.quantity cm3/ : 157.5...161.5 1000 s: (154.5...164.5) Testing: 1st rack travel in: 13.0 rpm : 1075...1090 Speed Aneroid pressure h: -2nd rack travel in: 4.00 Speed rpm : 500 rpm : 1130...1160 Del.quantity cm3/: 67.0...69.0 Speed 4th rack travel in: 1250 1000 s: (65.0...71.0) rpm : 0.00...1.00Speed LOW IDLE 1 **BREAKAWAY** Control Lever position degrees: 72...80 1st version Setting point w/out bumper spring 1mm rack travel less than rpm : 250 Speed Rack travel in mm: 5.0 full load rack tr: 13.0 rpm : 1075...1020 Speed l'esting: Speed : 100 man STARTING FUEL DELIVERY Minimum rack trave: 7.5 : 250 man Rack travel in mm: 4.9...5.1 Speed rpm : 100 Del.quantity cm3/ : 70.0...90.0 1000 s: (67.0...93.0) Aneroid/Altitude Compensator Test LOW IDLE 1st version Speed : 250 rpm Setting Rack travel in mm: 4.9...5.1 Speed rom : 500 Del.quantity cm3/: 13.0...17.0 Pressure hPa : 1100 1000 s: (10.5...19.5) cm3 : 3.50 Rack travel mm : 14.0...14.1 Spread 1000 s: (5.50) Measurement 1/min: 500 Speed Remarks: : MAN #3-7127 1st pressure hPa : -Rack travel in m: 9.2...9.3 2nd pressure hPa : 150 Rack travel in m: 9.5...9.6 3rd pressure hPa : 700 Rack travel in m: 12.8...13.1 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1100 Speed npm : 800 Del.quantity cm3/: 161.0...163.0 1000 s: (158.0...166.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MAN 7,3 D : 16.02.94 Edition Replaces : 12.92 Test oil : ISO-4113 Combination no. : 0 403 456 115 Injection pump Pump designation: PES6MW100/321RS1215 EP type number : 0 413 406 205 Governor Governor design: RQ250/1200MW84-7 : 0 420 082 055 Governer no. Customer-spec. information Customer : MAN : D 0826 LUH01 Engine 1st version kW : 199.0 Rated speed : 2400 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 419 992 198 Inlet press., bar: 1.50 Test nozzle holder : 0 681 343 009 assembly Openina pressure, bar : 172...175 Test lines : 1 680 750 008 Outside diameter x Wall thickness : 6.00X2.00X600 x Length mm (A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

: 3.5...3.6

: (3.3.45...3.65)

per values ___

BEGINNING OF DELIVERY

Prestroke mm

Test pressure, bar: 30...32

Rack travel in mm: 9.0...12.0

: 0-60-120-180-240-300 Phasing Tolerance $+ - \circ : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1000 Rack travel in mm : 14.2...14.3 Del.quantity cm3/: 17.0...17.2 100 s: (16.7...17.5) Spread cm3 : 0.4100 s: (0.7) 2rid speed rpm : 250.0 Rack travel in mm: 6.8...7.2 Del.quantity cm3/: 2.8...3.2 100 s: (2.55...3.45) cm3 : 0.3Spread 100 s: (0.5) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpin : 1320 travel mm : 9.3...9.7 rpm : 1255 2nd speed : 6.5...6.7 travel mm rpm : 360 : 3.9...4.5 3rd speed travel mm rpm : 250 4th speed : 1.6...2.0 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: 108...110 rpm : 600 Rack travel in mm : 19.2...20.8 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm: 1000 Aneroid pressure h: 1400 : 170.0...172.0 Del.quantity 1000 : (167.0...175.0) : 4.00 Spread cm3 1000 : (7.50)

Firing order

: 1-5-3-6-2-4

RATED SPEED cm3 : 4.00Spread 1000 s: (7.5) 1st version Aneroid pressure h: 1400 Control Lever rpm : 600 position degrees: 95...103 Del.quantity cm3/: 176.0...180.0 1000 s: (173.0...183.0) Setting point: cm3 : 6.00Spread Speed : 600 1000 s: (9.00) Rack travel in mm : 20.0 Aneroid pressure h: 1400 Speed rpm : 1200 Del.quantity cm3/ : 165.0...169.0 Testina: 1st rack travel in: 13.2 1000 s: (162.0...172.0) rpm : 1245...1260 Speed Aneroid pressure h: -2nd rack travel in: 4.00 rpm : 500 Speed Speed rpm : 1340...1370 Del.quantity cm3/: 78.0...80.0 4th rack travel in: 1450 1000 s: (76.0...82.0) rom : 0.00...1.00Speed LOW IDLE 1 BREAKAWAY Control Lever position degrees: 71...79 1st version Setting point w/out bumper spring 1mm rack travel less in : 250 rom Rack travel in mm: 7.0 full load rack tr: 1, 2 rpm : 1245...1260 Speed Testing: Speed rpm : 100 STARTING FUEL DELIVERY Minimum rack trave: 8.5 : 250 rpm Rack travel in mm: 6.8...7.2 : 100 Speed rpm Del.quantity cm3/: 60.0...80.0 Aneroid/Altitude 1000 s: (57.0...83.0) Compensator Test LOW IDLE 1st version Speed rpm : 250 Setting Rack travel in mm: 6.8...7.2 : 500 Speed rpm Del.quantity cm3/: 28.0...32.0 Pressure hPa : 1400 1000 s: (25.5...34.5) Rack travel mm : 14.2...14.3 cm3 : 3.50 Spread 1000 s: (5.50) Measurement $1/\min : 500$ Speed Remarks: : MAN #3-7126 1st pressure hPa : -Rack travel in m: 10.0...10.2 2nd pressure hPa : 270 Rack travel in m: 10.5...10.7 3rd pressure hPa : 850 Rack travel in m: 13.4...13.6 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1400 rpm : 1000 Speed Del.quantity cm3/: 170.0...172.0 1000 s: (167.0...175.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MAN 7,3 D 1 Edition : 16.02.94 Replaces : 03.93 Test oil : ISO-4113 Combination no. : 0 403 456 116 Injection pump Pump designation : PES6MW100/321RS1215 Er type number : 0 413 406 205 Governor Governor design. : RQ250/1200MW84-8 : 0 420 082 063 Governer no. Customer-spec. information Customer : MAN Engine : D 0826 LF 04 1st version kW : 199.0 Rated speed : 2400 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 419 992 198 Inlet press., bar: 1.50 Test nozzle holder assembly : 0 681 343 009 Opening. pressure, bar : 172...175 Test lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values BEGINNING OF DELIVERY Test pressure, bar: 30...32

: 3.5...3.6

Rack travel in mm: 9.0...12.0

: (3.3.45...3.65)

Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance $+ - \circ : 0.50 (0.75)$ Time to cyl. no. : 1 BASIC SE TING 1st speed rpm: 1000 Rack travel in mm: 14.05...14.25 Del.quantity cm3/: 16.75...16.95 100 s: (16.45...17.25) Spread cm3 : 0.4100 s: (0.7) 2nd speed rpm : 250.0 Rack travel in mm : 5.5...5.7 Del.quantity cm3/ : 2.1...2.5 100 s: (1.85...2.75) Spread cm3 : 0.3100 s: (0.5) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm : 1320 travel mm : 9.3...9.7 : 1255 2nd speed rpm : 6.5...6.7 travel mm 3rd speed rpm : 360 travel mm : 3.9...4.5 4th speed rpm : 250 travel mm : 1.6...2.0 GUIDE SLEEVE POSITION Control-lever position Degree: 108...110 rpm : 600 Rack travel in mm : 19.2...20.8 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1000 Aneroid pressure h: 1200 Del.quantity : 167.5...169.5 1000 : (164.5...172.5) Spread cm3 : 4.00 1000 : (7.50)

Prestroke mm

RATED SPEED Spread cm3 : 4.001000 s: (7.5) 1st version Aneroid pressure h: 1200 Speed rpm : 600 Del.quantity cm3/ : 174.0...178.0 1000 s: (171.0...181.0) Control lever position degrees: 91...99 Setting point: Spread cm3 : 6.00 Speed : 600 1000 s: (9.00) rom Rack travel in mm: 20.0 Aneroid pressure h: 1200 : 1200 Speed rpm Del.quantity cm3/: 163.0...167.0 1000 s: (160.0...170.0) Testina: 1st rack travel in: 12.6 rpm : 1245...1260 Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/ : 77.0...79.0 1000 s: (75.0...81.0) 2nd rack travel in: 4.90 rpm : 1340...1370 Speed 4th rack travel in: 1450 rpm : 0.00...1.00Speed LOW IDLE 1 **BREAKAWAY** Control lever position degrees: 67...75 1st version Setting point w/out bumper spring 1mm rack travel less than rpm : 250 Rack travel in mm: 5.6 full load rack tr: 12.6 Speed rrom : 1245...1260 Testina: Speed rom : 150 STARTING FUEL DELIVERY Minimum rack trave: 7.5 rpm : 250 Rack travel in mm: 5.5...5.7 Speed rom : 100 Del.quantity cm3/: 70.0...90.0 Aneroid/Altitude 1000 s: (67.0...93.0) Compensator Test LOW IDLE 1st version Speed rpm Setting Rack travel in mm: 5.5...5.7 : 500 Speed rpm Del.quantity cm3/: 21.0...25.0 hPa : 1200 Pressure 1000 s: (18.5...27.5) Rack travel mm : 13.6...13.7 Spread cm3 : 3.50 1000 s: (5.50) Measurement 1/min: 500 Speed Remarks: : MAN #3-7137 1st pressure hPa : -Rack travel in m: 9.5...9.6 2nd pressure hPa : 200 Rack travel in m: 10.0...10.1 3rd pressure hPa : 700 Rack travel in m: 12.3...12.6 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 rpm : 1000 Del.quantity cm3/: 167.5...169.5 1000 s: (164.5...172.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MAN : 16.02.94 Edition : 08.92 Replaces : ISO-4113 Test oil Combination no. : 0 403 456 119 Injection pump Pump designation : PES6MW100/321RS1201 EP type number : 0 413 406 190 Governor Governor design. : RQ250/1200MW84-10 : 0 420 082 065 Governer no. Customer-spec. information Customer : MAN : D 0826 LF08/LUH05 Engine 1st version kW : 169.0 : 2400 Raited speed TEST BENCH REQUIREMENTS Test oil inlet temp. "C : 38...42 Overflow valve : 1 419 992 198 Inlet press., bar: 1.50 Test nozzle holder : 0 681 343 009 assembly **Opening** pressure, bar : 172...175 Test lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values BEGINNING OF DELIVERY Test pressure, bar: 30...32 : 3.5...3.6 : (3.3.45...3.65) Prestroke mm Rack travel in mm : 9.0...12.0 002

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 800

Rack travel in mm : 13.2...13.3

Del.quantity cm3/: 14.8...15.0

100 s: (14.5...15.3)

Spread cm3 : 0.4

100 s: (0.7)

2rid speed rpm : 250.0 Rack travel in mm: 5.4...5.6 Del.quantity cm3/: 1.6...2.0 100 s: (1.35...2.25)

Spread cm3 : 0.3100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL rpm : 1300 1st speed : 8.4...8.8 travel mm rpm : 1260 2nd speed

travel mm : 6.6...6.8 3rd speed rpm : 345 : 4.0...4.6 travel mm rpm : 250 4th speed

travel mm : 1.8...2.2

GUIDE SLEEVE POSITION Control-lever position

Degree: 108...110 rpm : 600

Rack travel in mm : 18.2...19.8

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800 Aneroid pressure h: 1000

Del.quantity : 148.0...150.0 1000 : (145.0...153.0)

Spread : 4.00 cm3 1000 : (7.50)

1000 s: (7.5) 1st version Aneroid pressure h: 1000 Control lever Speed rpm : 1200 position degrees: 92...100 Del.quantity cm3/: 143.0...147.0 1000 s: (140.0...150.0) Setting point: Spread cm3 : 6.00 Speed : 600 man 1000 s: (9.00) Rack travel in mm : 19.0 Aneroid pressure h: 1000 Speed rpm : 600 Del.quantity cm3/: 147.0...151.0 1000 s: (144.0...154.0) Testing: 1st rack travel in: 11.8 rpm : 1245...1260 Speed Aneroid pressure h: -2nd rack travel in: 4.00 rpm : 500 Speed Speed rpm : 1300...1330 4th rack travel in: 1400 Del.quantity cm3/: 74.0...76.0 1000 s: (72.0...78.0) Speed rpm : 0.00...1.00LOW IDLE 1 BREAKAWAY Control lever position degrees: 69...77 1st version Setting point w/out bumper spring 1mm rack travel less than Speed rpm : 250 Rack travel in mm: 5.5 full load rack tr: 11.8 Speed rpm : 1245...1260 Testina: Speed : 100 man STARTING FUEL DELIVERY Minimum rack trave: 7.0 Speed rpm : 250 Rack travel in mm: 5.4...5.5 Speed : 100 rpm Del.quantity cm3/: 60.0...80.0 1000 s: (57.0...83.0) Aneroid/Altitude Compensator Test LOW IDLE 1st version Speed rpm : 250 Settina Rack travel in mm: 5.4...5.6 Del.quantity cm3/: 16.0...20.0 Speed : 500 rom Pressure hPa : 1000 1000 s: (13.5...22.5) Rack travel mm : 13.2...13.3 cm3 : 3.50 Spread 1000 s: (5.50) Measurement 1/min: 500 Speed Remarks: : MAN #3-7219 1st pressure hPa : -Rack travel in m: 10.0...10.1 2nd pressure hPa : 150 Rack travel in m: 10.3...10.4 3rd pressure hPa : 550 Rack travel in m: 11.9...12.2 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed rpm: 800 Del.quantity cm3/: 148.0...150.0 1000 s: (145.0...153.0)

Spread

cm3 : 4.00

RATED SPEED

Note remarks

Test sheet : MAN 6,2 F Edition : 16.02.94 Replaces : 09.92 Test oil : ISO-4113

Combination no. : 0 403 456 120

Injection pump

Pump designation : PES6MW100/321RS1210

EP type number : 0 413 406 201

Governor

Governor design. : RQ250/1050MW84-11 Governor no. : 0 420 082 066

Customer—spec. information Customer : MAN

Engine : D 0826 LUH06

1st version kW : 184.0 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test Lines : 1 680 750 008

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.5...3.6

: (3.3.45...3.65)

Rack travel in mm : 9.0...12.0

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 800

Rack travel in mm : 14.0...14.1

Del.quantity cm3/: 16.1...16.3

100 s: (15.8...16.6)

Spread cm3: 0.4

100 s: (0.7)

2nd speed rpm : 250.0
Rack travel in mm : 5.0...5.2
Del.quantity cm3/ : 1.3...1.7

100 s: (1.05...1.95)

Spread cm3 : 0.3 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1125
 travel mm : 7.3...7.7
2nd speed rpm : 1050
 travel mm : 6.1...6.3
3rd speed rpm : 400
 travel mm : 5.7...6.3

4th speed rpm : 250 travel mm : 2.5...2.9

GUIDE SLEEVE POSITION

Control-lever position

Degree: 108...110

Speed rpm : 600 Rack travel in mm : 19.2...20.8

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm: 800 Aneroid pressure h: 1100

Del.quantity : 161.0...163.0

1000 : (158.0...166.0) Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED Spread cm3 : 4.001000 s: (7.5) 1st version Aneroid pressure h: 1100 Control lever Speed : 600 man position degrees: 99...107 Del.quantity cm3/: 161.0...165.0 1000 s: (158.0...168.0) Setting point: Spread cm3 : 6.001000 s: (9.00) Speed : 600 rpm Aneroid pressure h: 1100 Rack travel in mm : 20.0 Speed rpm : 1050 Del.quantity cm3/ : 155.0...159.0 Testing: 1st rack travel in: 13.00 1000 s: (152.0...162.0) rpm : 1075...1090 Speed Aneroid pressure h: -2nd rack travel in: 4.00 rpm : 500 Speed rpm : 1130...1160 Speed Del.quantity cm3/: 67.0...69.0 4th rack travel in: 1250 1000 s: (65.0...71.0) rpm : 0.00...1.00Speed LOW IDLE 1 BREAKAWAY Control lever position degrees: 76...84 1st version Setting point w/out bumper spring 1mm rack travel less than rpm : 250 Rack travel in mm : 5.1 full load rack tr: 13.0 Speed rpm : 1075...1090 Testing: rpm : 100 Speed STARTING FUEL DELIVERY Minimum rack trave: 6.5 : 250 Speed rpm Rack travel in nm : 5.0...5.2Speed rpm : 100 Del.quantity cm3/: 60.0...80.0 Aneroid/Altitude 1000 s: (57.0...83.0) Compensator Test LOW IDLE 1st version Speed rpm : 250 Setting Rack travel in mm: 5.0...5.2 : 500 Speed man Del.quantity cm3/: 13.0...17.0 Pressure hPa : 1100 1000 s: (10.5...19.5) Rack travel mm : 14.0...14.1 cm3 : 3.50 Spread 1000 s: (5.50) Measurement Speed 1/min: 500 Remarks: : MAN #3-7220 1st pressure hPa : -Rack travel in m: 9.4...9.5 2nd pressure hPa : 150 Rack travel in m: 9.7...9.8 3rd pressure hPa : 700 Rack travel in m: 13.2...13.5 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1100 : 800 Speed rpm Del.quantity cm3/: 161.0...163.0 1000 s: (158.0...166.0)

Note remarks

Test sheet : MAN 6,2 F Edition : 16.02.94

Replaces : 09.92 Test oil : 150-4113

Combination no. : 0 403 456 121

Injection pump

Pump designation: PES6MW100/321RS1186

EP type number : 0 413 406 168

Governor

Governor design. : RQ250/1200MW84-12

Governer no. : 0 420 082 067

Customer—spec. information Customer : MAN

Engine : D 0826 LUH03

1st version kW : 157.0 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Openina .

pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter x Wall thickness

x wall intervess

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.5...3.6

: 3.5...3.6 : (3.3.45...3.65)

Rack travel in mm: 9.0...12.0

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance $+ - \circ : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 800

Rack travel in mm : 12.7...12.8

Del.quantity cm3/: 13.3...13.5

100 s: (13.1...13.7)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 250.0 Rack travel in mm : 5.5...5.7 Del.quantity cm3/ : 1.9...2.3 100 s: (1.65...2.55)

Spread cm3: 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1280
 travel mm : 9.5...9.9
2nd speed rpm : 1250
 travel mm : 7.5...7.7
3rd speed rpm : 350
 travel mm : 5.2...5.8
4th speed rpm : 250

travel mm : 2.2...2.6

GUIDE SLEEVE POSITION Control-lever position

Degree: 108...110 rpm : 600

Rack travel in mm : 14.7...16.3

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800 Aneroid pressure h: 1000

Del.quantity : 133.0...135.0

1000 : (131.0...137.0)

Spread cm3 : 4.00 1000 : (7.50)

RATED SPEED Spread cm3 : 4.001000 s: (7.5) 1st version Anaroid pressure h: 1000 Control lever : 600 Speed rpm Del.quantity cm3/: 131.5...135.5 position degrees: 104...112 1000 s: (128.5...138.5) Setting point: cm3 : 6.00 Spread Speed 1000 s: (9.00) Rack travel in mm: 15.5 Aneroid pressure h: 1000 : 1200 Speed rom Del.quantity cm3/: 129.5...133.5 1000 s: (126.5...136.5) Testing: 1st rack travel in: 11.50 rpm : 1245...1260 Speed Aneroid pressure h: -2nd rack travel in: 4.00 Speed rpm : 500 : 1290...1320 Speed Del.quantity cm3/: 74.0...76.0 rpm 4th rack travel in: 1400 1000 s: (72.0...78.0) Speed rpm : 0.00...1.00LOW IDLE 1 BREAKAWAY Control lever position degrees: 70...78 1st version Setting point w/out bumper spring 1mm rack travel less than rpm : 250 Rack travel in mm: 5.6 full load rack tr: 11.5 rpm : 1245...1260 Speed Testina: Speed rpm : 100 STARTING FUEL DELIVERY Minimum rack trave: 7.0 rpm Rack travel in mm: 5.5...5.7 Speed : 100 CDID Del.quantity cm3/ : 70.0...90.0 Aneroid/Altitude 1000 s: (67.0...93.0) Compensator Test LOW IDLE 1st version Speed rpm : 250 Settina Rack travel in mm: 5.5...5.7 Speed : 500 חסרו Del.quantity cm3/: 19.0...23.0 hPa : 1000 Pressure 1000 s: (16.5...25.5) Rack travel mm : 12.8...12.9 cm3 : 3.50 Spread 1000 s: (5.50) Measurement $1/\min : 500$ Speed Remarks: : MAN #3-7221 1st pressure hPa : -Rack travel in m: 10.0...10.1 2nd pressure hPa : 200 Rack travel in m: 10.3...10.4 3rd pressure hPa : 500 Rack travel in m: 12.0...12.3 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed rpm : 800 Del.quantity cm3/: 133.0...135.0 1000 s: (131.0...137.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Firing order : 1-5- 3- 6- 2- 4 Note remarks Test sheet : MAN Phasing : 0-60-120-180-240-300 : 16.02.94 Edition : 10.92 Replaces Tolerance $+ - ^{\circ} : 0.50 (0.75)$ Test oil : ISO-4113 Time to cyl. no. : 1 Combination no. : 0 403 456 122 BASIC SETTING Injection pump Pump designation : PES6MW100/321RS1201 1st speed rpm: 800 EP type number : 0 413 406 190 Governor Rack travel in mm : 12.8...12.9 Governor design.: RQ250/1200MW84-13 : 0 420 082 068 Governer no. Del.quantity cm3/: 14.1...14.3 Customer-spec. information 100 s: (13.8...14.6) Customer : MAN cm3 : 0.4Spread **Engine** : D 0826 LF08 100 s: (0.7) 1st version kW : 169.0 Rated speed : 2400 rpm : 250.0 2nd speed Rack travel in mm: 5.4...5.6 TEST BENCH REQUIREMENTS Del.quantity cm3/: 1.6...2.0 100 s: (1.35...2.25) Test oil cm3 : 0.3Spread inlet temp. °C : 38...42 100 s: (0.5) Overflow valve (B) Setting of injection pump : 1 419 992 198 with governor Inlet press., bar: 1.50 GUIDE SLEEVE TRAVEL 1st speed rpm : 250 Test nozzle holder : 1.56...1.76 travel mm : 0 681 343 009 assembly : 359 2nd speed rpm travel mm : 3.6...3.8 Opening | 3rd speed rpm : 520 pressure, bar : 172...175 : 6.9...7.1 travel mm : 912 4th speed rpm : 6.98...7.18 travel mm Test lines : 1 680 750 008 : 1257 5th speed rpm travel mm : 7.51...7.71 Outside diameter x Wall thickness GUIDE SLEEVE POSITION x Length mm : 6.00x2.00x600 Control-lever position Degree: 108...110 (A) Injection pump setting values rpm : 600 Insp. values in parentheses Rack travel in mm : 14.7...16.3 Set equal delivery quant. per values FULL LOAD DELIV. AT FULL LOAD STOP BEGINNING OF DELIVERY 1st version Test pressure, bar: 30...32 Speed rpm : 800 Aneroid pressure h: 1000 Del.quantity : 141.0...143.0 1000 : (138.0...146.0) Prestroke mm : 3.5...3.6

: (3.3.45...3.65)

Rack travel in mm : 9.0...12.0

Spread cm3 : 4.00 1000 : (7.50)RATED SPEED 1st version Control lever position degrees: 98...106 Setting point: : 600 Speed rpm Rack travel in mm: 15.5 Testina: 1st rack travel in: 11.3 rpm : 1245...1260 Speed 2nd rack travel in: 4.00 rpm : 1300...1330 Speed 4th rack travel in: 1400 Speed rpm : 0.00...1.00LOW IDLE 1 Control lever position degrees: 69...77 Setting point w/out bumper spring rom : 250 Rack travel in mm: 5.5 Testing: Speed תמיז : 100 Minimum rack trave: 7.0 rpm : 250 Rack travel in mm: 5.4...5.6 Aneroid/Altitude Compensator Test 1st version Setting Speed : 500 rom hPa : 1000 Pressure : 12.7...12.9 Rack travel mm Measurement Speed $1/\min : 500$ 1st pressure hPa : -Rack travel in m: 10.3...10.4 2nd pressure hPa : 150 Rack travel in m: 10.6...10.7 3rd pressure hPa : 550 Rack travel in m: 12.2...12.5 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed rpm : 800

Del.quantity cm3/: 141.0...143.0 1000 s: (138.0...146.0) Spread cm3 : 4.001000 s: (7.5) Aneroid pressure h: 1000 Speed rpm : 600 Del.quantity cm3/ : 138.0...142.0 1000 s: (135.0...145.0) Spread cm3 : 6.001000 s: (9.00) Aneroid pressure h: 1000 : 1000 rom Del.quantity cm3/: 137.0...141.0 1000 s: (134.0...143.0) Aneroid pressure h: rpm : 500 Speed Del.quantity cm3/: 74.0...76.0 1000 s: (72.0...78.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 11.3 Speed rpm : 1245...1260 STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/: 60.0...80.0 1000 s: (57.0...83.0) LOW IDLE Speed rpm : 250 Rack travel in mm: 5.4...5.6

Speed rpm : 250
Rack travel in mm : 5.4...5.6
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50

pread cm3 : 3.50 1000 s: (5.50)

Remarks:

: MAN #3-7239

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Note remarks

Test sheet

: MAN Edition : 16.02.94 : 12.92 Replaces Test oil : ISO-4113

Combination no. : 0 403 456 123

Injection pump Pump designation : PES6MW100/321RS1201

EP type number : 0 413 406 190

Governor

Governor design. : RQ250/1200MW84-14

: 0 420 082 069 Governer no.

Customer-spec. information Customer : MAN

Engine : D 0826 LF02/LF06

1st version kW : 169.0 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

: 3.5...3.6 Prestroke mm

: (3.3.45...3.65)

Rack travel in mm : 9.0...12.0

Firing order : 1-5-3-6-2-4

: 0-60-120-180-240-300 Phasing

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 800

Rack travel in mm : 12.8...12.9

Del.quantity cm3/: 14.1...14.3

100 s: (13.8...14.6)

Spread cm3 : 0.4

100 s: (0.7)

rpm : 250.0 2nd speed Rack travel in mm: 5.4...5.6 Del.quantity cm3/: 1.6...2.0

100 s: (1.35...2.25) Spread cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 1.56...1.76

rpm : 359 2nd speed

: 3.6...3.8 travel mm

rpm : 520 3rd speed

: 6.9...7.1 travel mm

4th speed : 912 rpm

: 6.98...7.18 travel mm

: 1257 5th speed rom

: 7.51...7.71 travel mm

GUIDE SLEEVE POSITION Control-lever position

Degree: 108...110

rpm : 600

Rack travel in mm : 14.7...16.3

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 1000

: 141.0...143.0 Del.quantity 1000 : (138.0...146.0)

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Spread cm3 : 4.00 Del.quantity cm3/: 141.0...143.0 1000 : (7.50) 1000 s: (138.0...146.0) Spread cm3 : 4.00RATED SPEED 1000 s: (7.5) Aneroid pressure h: 1000 1st version Speed : 600 MOL Del.quantity cm3/: 138.0...142.0 1000 s: (135.6...145.0) Control lever position degrees: 101...109 cm3 : 6.00 Spread Setting point: 1000 s: (9.00) Speed : 600 Aneroid pressure h: 1000 rpm Rack travel in mm: 15.5 Speed rpm : 1000Del.quantity cm3/: 137.0...141.0 1000 s: (134.0...143.0) Testina: 1st rack travel in: 11.3 Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/: 74.0...76.0 1000 s: (72.0...78.0) rpm : 1245...1260 Speed 2nd rack travel in: 4.00 Speed rpm : 1300...1330 4th rack travel in: 1400 Speed rom : 0.00...1.00**BREAKAWAY** LOW IDLE 1 Control lever 1st version position degrees: 71...79 1mm rack travel less than Setting point w/out bumper spring rpm : 250 Speed full load rack tr: 11.3 Rack travel in mm : 5.5 rpm : 1245...1260 Speed Testing: STARTING FUEL DELIVERY Speed rpm : 100 Minimum rack trave: 7.0 rom : 250 rpm : 100 Speed Rack travel in mm: 5.4...5.6 Del.quantity cm3/: 60.0...80.0 1000 s: (57.0...83.0) Aneroid/Altitude Compensator Test LOW IDLE rpm : 250 Speed 1st version Rack travel in mm: 5.4...5.6 Setting Del.quantity cm3/: 16.0...20.0 : 500 Speed חכרו 1000 s: (13.5...22.5) hPa : 1000 cm3 : 3.50 Pressure Spread Rack travel mm : 12.7...12.9 1000 s: (5.50) Measurement Remarks: 1/min: 500 Speed : MAN #3-7240 1st pressure hPa : -Rack travel in m: 10.3...10.4 2nd pressure hPa : 155 Rack travel in m: 10.6...10.7 3rd pressure hPa : 550 Rack travel in m: 12.2...12.5 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed rpm : 800

Note remarks

Test sheet

: MAN

Edition

: 14.02.94

Replaces

Test oil

: 150-4113

Combination no. : 0 403 456 126

Injection pump

Pump designation : PES6MW100/321RS1201

EP type number

: 0 413 406 190

Governor

Governor design. : RQV250/1200MW83-4

Governer no.

: 0 420 083 307

Customer-spec, information Customer

: MAN

Engine

: D 0826 LFL06

1st version kW Rated speed

: 162.0 : 2400

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C

: 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly

: 0 681 343 009

Opening

pressure, bar

: 172...175

Test lines

: 1 680 750 008

Outside diameter

x Wall thickness

x Length mm

: 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm

: 3.50...3.60

: (3.45...3.65)

Rack travel in mm : 15.00...0.00

Firing order

: 1-5-3-6-2-4

Phasing

: 0-60-120-180-240-300

Tolerance $+ - ^{\circ} : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

1st speed

rpm: 800

Rack travel in mm : 12.65...12.75

Del.quantity cm3/: 13.9...14.1

100 s: (13.6...14.4)

Spread

cm3 : 0.4

100 s: (0.7)

2nd speed

rpm : 250.0

Rack travel in mm: 5.6...5.8 Del.quantity cm3/: 1.6...2.0

100 s: (1.35...2.25)

Spread

cm3 : 0.3

100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 250

travel mm : 0.88...1.38

: 333 2nd speed rpm

travel mm : 1.78...2.28

3rd speed rpm : 440

travel mm : 2.87...3.37

4th speed : 807 rpm

travel mm : 5.58...6.08 : 1250

5th speed rpm

travel mm : 10.19...10.69

GUIDE SLEEVE POSITION Control-lever position

Degree: 125...129

rpm : 1300

Rack travel in mm: 11.0...12.0

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

rom : 800

Aneroid pressure h: 1000

Del.quantity : 159.0...144.0)

Spread cm3 : 4.00 1000 : (7.00)RATED SPEED 1st version Control lever position degrees: 118...126 Testing: 1st rack travel in: 11.20 Speed rpm : 1245...1260 2nd rack travel in: 4.00 Speed rpm : 1320...1350 4th rack travel in: 1400 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 73...81 Setting point w/out bumper spring Speed : 250 rom Rack travel in mm: 5.7 Testing: rpm : 150 Speed Minimum rack trave: 7.00 rpm : 250 Speed Rack travel in mm : 5.60...5.80 Aneroid/Altitude Compensator Test 1st version Setting Speed : 500 man hPa : 1000 Pressure Rack travel mm : 12.65...12.75 Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 9.95...10.05 2nd pressure hPa : 155 Rack travel in m: 10.30...10.40 3rd pressure hPa : 550 Rack travel in m: 12.00...12.30 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 1000 s: (136.0...144.0)

cm3 : 4.00

1000 s: (7.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 11.20 Speed rpm : 1245...1260

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 60.0...80.0 1000 s: (57.0...83.0)

LOW IDLE

Speed rpm : 250
Rack travel in mm : 5.60...5.80
Del.quantity cm3/: 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

: MAN #3-7332

Spread

Note remarks

Test sheet : MAN

Edition : 16.02.94

Replaces

Test oil : ISO-4113

Combination no. : 0 403 456 127

Injection pump

Pump designation : PES6MW100/321RS1201

EP type number : 0 413 406 190

Governor

Governor design. : RQ250/1200MW84-15

Governer no. : 0 420 082 072

Customer-spec, information

Customer : MAN

Engine : D 0826 LFL06

1st version kW : 162.0 Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Openina

pressure, bar : 172...175

Test Lines : 1 680 750 008

Outside diameter

x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant. per values ____

BEGINNING OF DELIVERY Test pressure, bar: 30...32

Prestroke mm

: 3.5...3.6 : (3.3.45...3.65)

Rack travel in mm : 9.0...12.0

Firing order : 1-5- 3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance $+ - ^{\circ} : 0.50 (0.75)$

Time to cyl. no. : 1

BASIC SETTING

rpm: 800 1st speed

Rack travel in mm : 12.65...12.75

Del.quantity cm3/: 13.9...14.1

100 s: (13.6...14.4)

cm3 : 0.4Spread

100 s: (0.7)

rpm : 250.0 2nd speed Rack travel in mm : 5.6...5.8 Del.quantity cm3/: 1.6...2.0

100 s: (1.35...2.25)

cm3 : 0.3Spread 100 s: (0.5)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

rpm : 250 1st speed

travel mm : 1.43...1.63

2nd speed rpm : 364

: 3.58...3.78 travel mm

: 530 3rd speed rpm

travel mm : 6.9...7.1

: 914 4th speed mgn

: 6.98...7.18 travel mm 5th speed

rpm : 1262

: 7.51...7.71 travel mm

GUIDE SLEEVE POSITION

Control-lever position

Degree: 108...110

rpm : 600

Rack travel in mm : 14.2...17.8

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800

Aneroid pressure h: 1000

Del.quantity : 139.0...141.0

1000 : (136.0...144.0)

Del.quantity cm3/: 139.0...141.0 1000 s: (136.0...144.0) Spread cm3 : 4.001000 : (7.50) Spread cm3 : 4.00RATED SPEED 1000 s: (7.5) Aneroid pressure h: 1000 1st version Speed rpm : 1200 Del.quantity cm3/: 134.0...138.0 Control Lever position degrees: 98...106 1000 s: (131.0...141.0) cm3 : 6.00 Spread Setting point: 1000 s: (9.00) Speed Aneroid pressure h: 1000 : 600 rpm Rack travel in mm: 16.5 Speed rpm : 600 Cel.quantity cm3/: 135.0...142.0 1000 s: (132.0...142.0) Testing: 1st rack travel in: 11.2 Aneroid pressure h: rpm : 1245...1260 Speed rpm : 500 Speed 2nd rack travel in: 4.00 Del.quantity cm3/: 74.0...76.0 rpm : 1320...1350 Speed 1000 s: (72.0...78.0) 4th rack travel in: 1400 rpm : 0.00...1.00Speed BREAKAWAY LOW IDLE 1 Control Lever 1st version position degrees: 69...77 imm rack travel less than Setting point w/out bumper spring rpm : 250 Speed full load rack tr: 11.2 Rack travel in mm: 5.7 rpm : 1245...1260 Speed Testing: STARTING FUEL DELIVERY Speed rpm : 100 Minimum rack trave: 7.0 rpm : 250 Speed rpm : 100 Del.quantity cm3/: 60.0...80.0 Rack travel in mm: 5.6...5.8 1000 s: (57.0...83.0) Aneroid/Altitude Compensator Test LOW IDLE Speed rpm : 250 1st version Rack travel in mm : 5.6...5.8 Setting Del.quantity cm3/: 16.0...20.0 Speed rom : 500 1000 s: (13.5...22.5) Pressure hPa : 1000 cm3 : 3.50 Spread Rack travel mm : 12.65...12.75 1000 s: (5.50) Measurement Remarks: 1/min: 500 Speed : MAN #3-7331 1st pressure hPa : -Rack travel in m: 9.95...10.05 2nd pressure hPa : 155 Rack travel in m: 10.3...10.4 3rd pressure hPa : 550 Rack travel in m: 12.0...12.3 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed rpm : 800

D15

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks

Test sheet : CDC Edition : 16.02.94 Replaces

: ISO-4113 Test oil

Combination no. : 0 403 466 133

Injection pump

Pump designation : PES6Ww100/120RS1137 EP type number : 0 413 406 131

Governor

Governor design. : RSV450...1100MW2A319

-20

Governer no. : 0 420 085 212

Customer-spec. information Customer : CDC

Engine : 6CTA-8.3L

1st version kW : 188.0 Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 017 assembly

Openina

pressure, bar : 207...210

Test lines : 1 680 750 014

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.5...3.6

: (3.45...3.65)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasina : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

BASIC SETTING

rpm: 1100 1st speed

Rack travel in mm: 14.3...14.4

Del.quantity cm3/: 14.9...15.1

100 s: (14.6...15.4)

Spread cm3 : 0.4

100 s: (0.7)

rpm : 425.0 2nd speed Rack travel in mm: 7.2...7.4 Del.quantity cm3/: 1.9...2.3

100 s: (1.65...2.55)

cm3 : 0.3 Spread 100 s: (0.5)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

rpm : 800 Speed Rack travel in mm : 0.30...1.00

Governor spring pre-tension Click setting x : 2.8

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

rpm : 1100 Speed

: 149.0...151.0 Del.quantity 1000 : (146.0...154.0)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version Control lever

position degrees: 92...100

Testina:

1st rack travel in: 13.30

Speed rpm : 1160...1170

2nd rack travel in: 4.00

rpm : 1235...1265 Speed

4th rack travel in: 1350

Speed rpm : 0.30...1.70 LOW IDLE 1 Control lever position degrees: 68...76 Setting point w/out bumper spring : 425 rpm Rack travel in mm: 7.3 Testing: Speed rpm : 100 Minimum rack trave: 19.0 Speed rpm : 425 Rack travel in mm : 7.2...7.4 SET IDLE AUXILIARY SPRING Speed rpm : 425 Rack travel in mm : 7.7...7.9 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 1100 Del.quantity cm3/: 149.0...151.0 1000 s: (146.0...154.0) Spread cm3 : 4.00 1000 s: (7.5) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 13.3 rpm : 1160...1170 Speed STARTING FUEL DELIVERY Speed : 100 rpm Del.quantity cm3/: 125.0...145.0 1000 s: (122.0...148.0) LOW IDLE rpm : 425 Speed Rack travel in mm: 7.2...7.4

Del.quantity cm3/: 19.0...23.0

cm3 : 3.50 1000 s: (5.50)

1000 s: (16.5...25.5)

: CDC #3921149

Spread

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : CDC Test sheet Edition : 14.02.94 Replaces Test oil : ISO-4113 Combination no. : 0 403 466 139 Injection pump Pump designation : PES6MW100/12URS1743 EP type number : 0 413 406 143 Governor Governor design. : RSV400...750MW7A319-: 0 420 085 217 Governer no. Customer-spec. information Customer : CDC : 6CTA Engine 1st version kW : 180.0 Rated speed : 1500 TEST BENCH REQUIREMENTS Test oil inlet temp. *C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 017 assembly **Opening** pressure, bar : 207...210 Test Lines : 1 680 750 014 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance + - * : 0.50 (0.75) BASIC SETTING 1st speed rpm: 750 Rack travel in mm : 13.00...13.10 Del.quantity cm3/: 17.95...18.15 100 s: (17.65...13.45) Spread cm3 : 0.4100 s: (0.7) 2nd speed rpm : 400.0Rack travel in mm: 6.0...6.2 Del.quantity cm3/: 1.6...1.8 100 s: (1.35...2.25) Spread cm3 : 0.3100 s: (0.5) GUIDE SLEEVE POSITION Control-lever position Degree: -3 003: mgn Speed Rack travel in mm : 0.30...1.00 Governor spring pre-tension Click setting x : 4.00FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 750 Speed : 179.5...181.5 Del.quantity 1000 : (176.5...184.5) cm3 : 4.00 1000 : (7.50) Spread RATED SPEED 1st version Control lever position degrees: 90...98 Testing: 1st rack travel in: 12.0 Speed rpm : 790...800 2nd rack travel in: 4.00 rpm : 815...845 Speed 4th rack travel in: 1000

per values

BEGINNING OF DELIVERY

Prestroke mm

Test pressure, bar: 30...32

: 3.60...3.70

: (3.55...3.75)

rom : 0.30...1.30Speed LOW IDLE 1 Control lever position degrees: 70...78 Setting point w/out bumper spring rpm : 400 Rack travel in mm: 6.10 Testing: Speed rom : 100 Minimum rack trave: 19.0 Speed rpm : 400 Rack travel in mm : 6.00...6.20 SET IDLE AUXILIARY SPRING Rack travel in mm : 4.00 START CUT-OUT Speed 1/min: 100 (80) FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 750 Del.quantity cm3/: 179.5...181.5 1000 s: (176.5...184.5) Spread cm3 : 4.00 1000 s: (7.5) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 12.0 rpm : 790...800 Speed STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 125.0...145.0 1000 s: (122.0...148.0)

LOW IDLE

rpm : 400 Speed

Rack travel in mm : 6.00...6.20 Del.quantity cm3/: 16.0...20.0 1000 s: (13.5...22.5) Spread cm3 : 3.50 1000 s: (5.50)

Remarks:

: CDC #3921083

BOSCH INJ. PUMP TEST SPECIFICATIONS : 3.60...3.70 Prestroke mm : (3.55...3.75) Rack travel in mm : 9.00...12.00 Note remarks Firing order : 1-5-3-6-2-4 Test sheet : CDC Edition : 14.02.94 Reclaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 403 466 144 Tolerance + - * : 0.50 (0.75) BASIC SETTING Injection pump Pump designation : PES6MW100/120RS1137-1st speed rpm: 1100 EP type number : 0 413 406 157 Governor Rack travel in mm : 13.30...13.40 : RSV450...1100MW2A319 Governor design. Del.quantity cm3/: 12.80...13.00 Governer no. : 0 420 085 226 100 s: (12.50...13.30) Customer-spec. information Customer : CDC Spread cm3 : 0.4Engine : 6CTA 100 s: (0.7) 1st version kW rpm : 450.0 : 171.0 2nd speed Rated speed Rack travel in mm: 6.5...6.7 : 2200 Del.quantity cm3/: 1.8...2.2 TEST BENCH REQUIREMENTS 100 s: (1.55...2.45) Spread cm3 : 0.3Test oil 100 s: (0.5) inlet temp. °C : 38...42 GUIDE SLEEVE POSITION Overflow valve Control-lever position : 1 417 413 047 Degree: -3 rpm : 800 Speed Inlet press., bar: 1.50 Rack travel in mm : 0.30...1.00 Test nozzle holder Governor spring pre-tension : 1 688 901 101 assembly Click setting x : 4.00Openina . FULL LOAD DELIV. AT FULL LOAD STOP pressure, bar : 207...210 1st version rpm : 1100 Speed Test Lines : 1 680 750 014 Del.quantity : 128.0...130.0 1000 : (125.0...133.0) Outside diameter : 4.00 Spread cm3 1000 : (7.50) x Wall thickness x Length mm : 6.00x2.00x600 RATED SPEED (A) Injection pump setting values Insp. values in parentheses 1st version Set equal delivery quant. Control lever per values position degrees: 101...109 BEGINNING OF DELIVERY Testing: Test pressure, bar: 30...32 1st rack travel in: 12.30

rpm : 1150...1170

Speed

2nd rack travel in: 4.00

rpm : 1260...1270 Speed 4th rack travel in: 1350 rpm : 0.30...1.70

Speed

LOW IDLE 1 Control lever

position degrees: 80...88 Setting point w/out bumper spring

rpm : 450 Rack travel in mm: 6.60

Testing:

Speed rpm : 100 Minimum rack trave: 19.0 rpm : 450 Speed

Rack travel in mm : 6.50...6.70

SET IDLE AUXILIARY SPRING Rack travel in mm: 4.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100 Del.quantity cm3/ : 128.0...130.0 1000 s: (125.0...133.0)

Spread cm3 : 4.00 1000 s: (7.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 12.30

rpm : 1150...1170 Speed

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 120.0...140.0 1000 s: (117.0...143.0)

LOW IDLE

rpm : 450 Speed

Rack travel in mm : 6.50...6.70 Del.quantity cm3/: 18.0...22.0 1000 s: (15.5...24.5)

Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

: CDC #3926218

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 3.50...3.60 : (3.45...3.65) Rack travel in mm : 9.00...12.00 Note remarks Firing order : 1-5-3-6-2-4 Test sheet : CDC Edition : 14.02.94 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 403 466 145 Tolerance + - * : 0.50 (0.75) Injection pump BASIC SETTING Pump designation : PES6MW100/120RS1137-1st speed rpm: 1100 EP type number : 0 413 406 180 Governor Rack travel in mm : 14.40...14.50 Governor design. : RSV550...1100MW2A319 Del.quantity cm3/: 14.5...14.7 : 0 420 085 225 Governer no. 100 s: (14.2...15.0) Customer-spec. information Customer : CDC Spread cm3 : 0.4Engine : 6CTA 100 s: (0.7) 1st version kW : 191.0 2nd speed rpm : 550.0Rated speed : 2200 Rack travel in mm: 6.4...6.6 Del.quantity cm3/: 1.75...2.15 100 s: (1.5...2.4) TEST BENCH REQUIREMENTS Spread cm3 : 0.3Test oil 100 s: (0.5) inlet temp. °C : 38...42 GUIDE SLEEVE POSITION Overflow valve Control-lever position : 1 417 413 047 Degree: -3 rpm : 800 Speed Inlet press., bar: 1.50 Rack travel in mm : 0.30...1.00 Test nozzle holder Governor spring pre-tension : 1 688 901 101 assembly Click setting x : 4.00 Opening. FULL LOAD DELIV. AT FULL LOAD STOP pressure, bar : 207...210 1st version rpm : 1100 Speed Test Lines : 1 680 750 014 Del.quantity : 145.0...147.0 1000 : (142.0...150.0) Outside diameter : 4.00 Spread cm3 x Wall thickness 1000 : (7.50) x Length mm : 6.00x2.00x600 RATED SPEED (A) Injection pump setting values Insp. values in parentheses 1st version Set equal delivery quant. Control Lever per values _ position degrees: 93...101 BEGINNING OF DELIVERY Testing: Test pressure, bar: 30...32 1st rack travel in: 13.40 rpm : 1160...1170 Speed

2nd rack travel in: 4.00

Speed rpm : 1230...1240 4th rack travel in: 1350

Speed rpm : 0.30...1.70

LOW IDLE 1 Control lever

position degrees: 71...79 Setting point w/out bumper spring

rpm : 550 Speed Rack travel in mm: 6.50

Testing:

rpm : 100 Speed Minimum rack trave: 19.0 Speed rpm : 550

Rack travel in mm : 6.40...6.60

SET IDLE AUXILIARY SPRING Rack travel in mm: 4.00

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100

Del.quantity cm3/: 145.0...147.0 1000 s: (142.0...150.0)

Spread cm3 : 4.00 1000 s: (7.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 13.40

rpm : 1160...1170 Speed

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 120.0...140.0 1000 s: (117.0...143.0)

LOW IDLE

Speed rpm : 550 Rack travel in mm : 6.40...6.60 Del.quantity cm3/: 17.5...21.5

1000 s: (15.0...24.0)

cm3 : 3.50Spread 1000 s: (5.50)

Remarks:

: CDC #3925549

BOSCH INJ. PUMP TEST SPECIFICATIONS : 3.50...3.60 Prestroke mm : (3.45...3.65) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Note remarks Test sheet : CDC Edition : 14.02.94 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 : 0 403 466 146 Combination no. Tolerance + - ° : 0.50 (0.75) Injection pump BASIC SETTING Pump designation : PES6MW100/120RS1137-1st speed rpm: 1100 EP type number : 0 413 406 157 Governor Rack travel in mm: 13.30...13.40 : RSV500...1100Mw2A335 Governor design. Del.quantity cm3/: 13.15...13.35 Governer no. : 0 420 085 235 100 s: (12.85...13.65) Customer-spec. information Customer : CDC Spread cm3 : 0.4Engine : 6CTA 100 s: (0.7) : 172.0 1st version kW 2nd speed rpm : 500 Rated speed : 2200 Rack travel in mm : 6.30...6.50 Del.quantity cm3/: 1.9...2.3 TEST BENCH REQUIREMENTS 100 s: (1.65...2.55) cm3 : 0.3Spread Test oil 100 s: (0.5) inlet temp. °C : 38...42 GUIDE SLEEVE POSITION Overflow valve Control-lever position : 1 417 413 047 Degree: -3 Speed rpm : 800 Inlet press., bar: 1.50 Rack travel in mm : 0.30...1.00 Test nozzle holder Governor spring pre-tension : 1 688 901 101 assembly Click setting x : 4.00**Opening** FULL LOAD DELIV. AT FULL LOAD STOP pressure, bar : 207...210 1st version Speed rpm : 1100 Test lines : 1 680 750 014 Aneroid pressure h: 1200 : 131.5...133.5 Del.quantity 1000 : (128.5...136.5) Outside diameter x Wall thickness Spread cm3 : 4.00 : 6.00x2.00x600 x Length mm 1000 : (7.50)(A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values ____ Control lever position degrees: 98...106 BEGINNING OF DELIVERY Test pressure, bar: 30...32 Testing:

1st rack travel in: 12.30

Speed

rpm : 1150...1170

2nd rack travel in: 4.00

Speed rpm : 1260...1270 4th rack travel in: 1350

Speed rpm : 0.30...1.70

LOW IDLE 1

Control lever

position degrees: 77...85

Setting point w/out bumper spring

nom : 500 Rack travel in mm: 6.40

Testing:

Speed rpm : 100 Minimum rack trave: 19.0

Speed rpm : 500

Rack travel in mm : 6.30...6.50

SET IDLE AUXILIARY SPRING

Rack travel in mm: 4.00

Aneroid/Altitude Compensator Test

1st version

Setting Speed

: 500 מוכנים

Pressure

Rack travel mm

hPa : 1200 mm : 14.40...14.50

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 11.35...11.55

2nd pressure hPa : 275

Rack travel in m: 12.10...12.20

3rd pressure hPa : 425

Rack travel in m: 13.10...13.50

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

Speed rpm : 1100

Del.quantfty cm3/: 131.5...133.5

1000 s: (128.5...136.5)

Spread cm3 : 4.00

1000 s: (7.5)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 12.30

Speed rpm : 1160...1170

D25

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 120.0...140.0

1000 s: (117.0...143.0)

LOW IDLE

Speed rpm : 500 Rack travel in mm : 6.30...6.50

Del.quantity cm3/: 19.0...23.0 1000 s: (16.5...25.5)

cm3 : 3.50 Spread

1000 s: (5.50)

Remarks:

: CDC #3926219

Note remarks

Test sheet

: MB

Edition

: 10.02.94

Replaces

Test oil

: ISO-4113

: 0 403 476 037B

Injection pump

Combination no.

Pump designation : PES6MW100/720RS1130

EP type number

: 0 413 406 122

Governor

Governor design. : RSV350...1300MW0A318

Governer no.

: 0 420 085 052

Customer-spec. information

Customer

: MB-NFZ

Engine

: OM 366 A

1st version kW

Rated speed

: 112.0

: 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

assembly

: 0 681 343 009

Openina

pressure, bar

: 172...175

Test lines

: 1 680 750 015

Outside diameter

x Wall thickness

x Length mm

: 6.00X1.50X600

(A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm

: 3.70...3.80

: (3.65...3.85)

Rack travel in mm : 9.00...12.00

D26

Firing order

: 1-5-3-6-2-4

Phasing

: 0-60-120-180-240-300

Tolerance + - °

: 0.50 (0.75)

BASIC SETTING

1st speed

rpm: 1200

Rack travel in mm : 10.10...10.30

Del.quantity cm3/: 6.85...7.15

100 s: (6.7...7.3)

Spread

Spread

cm3 : 0.3

100 s: (0.6)

rpm : 350.0

2nd speed Rack travel in mm: 8.0...8.2

Del.quantity cm3/: 0.9...1.3 100 s: (0.7...1.5)

cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

rpm : 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

rpm : 1200

Del.quantity

: 68.5...71.5 1000 : (67.0...74.0)

Spread

cm3

: 3.50

1000 : (6.00)

RATED SPEED

1st version

Testing:

Speed

Setting point:

Speed

rpm : 800

Rack travel in mm: 0.65

1st rack travel in: 9.20

Speed

rpm : 1220...1230

2nd rack travel in: 4.00

rpm : 1280...1310

Speed 4th rack travel in: 1325

rpm : 0.30...1.70

LOW TDLE 1 Control lever position degrees: 75...83 Setting point w/out bumper spring rpm : 350 Speed Rack travel in mm: 8.1 Testina: Speed rpn : 100 Minimum rack trave: 19.00 rpm : 350 Speed Rack travel in mm: 8.00...8.20 SET IDLE AUXILIARY SPRING Rack travel in mm: 2.00 TORQUE CONTROL Dimension a mm : 2.00 Torque control curve - 1st version 1st speed rpm : 1200 Rack travel in m: 10.10...10.30 rpm : 800 2nd speed Rack travel in m: 11.60...11.80 d speed rpm : 750 3rd speed Rack trave! in m: 11.60...11.80 rpm : 950 4th speed Rack travel in m: 11.50...11.70 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 1200 Del.quantity cm3/ : 68.5...71.5 1000 s: (67.0...73.0) cm3 : 3.50 Spread 1000 s: (6.0) : 800 Speed rpm Del.quantity cm3/: 72.0...76.0 1000 s: (70.0...78.0) cm3 : 5.00 Spread 1000 s: (7.00) Speed rpm : 750
Del.quantity cm3/: 68.5...73.5
1000 s: (66.0...76.0) : 900 Speed man

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 9.20 rpm : 1220...1230 Speed

Del.quantity cm3/: 75.5...80.5

1000 s: (73.0...83.0)

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 78.0...88.0 1000 s: (75.0...91.0)

LOW IDLE

Speed rpm : 350 Rack travel in mm : 8.06...8.20 Del.quantity cm3/: 9.0...13.0 1000 s: (7.0...15.0) Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

Note remarks

Test sheet : MB

Edition : 10.02.94

Replaces : -

Test oil : ISO-4113

Combination no. : 0 403 476 0370

Injection pump

Pump designation : PES6MW100/720RS1130

EP type number : 0 413 406 122

Governor

Governor design. : RSV350...1300Mw0A318

Governer no. : 0 420 085 052

Customer—spec. information Customer : MB-NFZ

Engine : OM 366 A

1st version kW : 112.0 Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. *C : 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Opening |

pressure, bar : 172...175

Test Lines : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.70...3.80

: (3.65...3.85)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance $+ - ^{\circ} : 0.50 (0.75)$

BASIC SETTING

1st speed rpm: 1100

Rack travel in mm : 10.70...10.80

Del.quantity cm3/: 6.95...7.25

100 s: (6.8...7.4)

Spread cm3 : 0.3

100 s: (0.6)

2nd speed rpm : 350.0
Rack travel in mm : 8.0...8.2
Del.quantity cm3/: 0.9...1.3

100 s: (0.7...1.5)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

Speed rpm: 800

Rack travel in mm : 0.30...1.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

Del.quantity : 69.5...72.5

1000 : (68.0...74.0)

Spread cm3 : 3.50

1000 : (6.00)

RATED SPEED

1st version

Setting point:

Speed rpm: 800

Rack travel in mm: 0.65

Testing:

1st rack travel in: 9.75

Speed rpm : 1140...1150

2nd rack travel in: 4.00

Speed rpm : 1170...1200

4th rack travel in: 1225

Speed rpm : 0.30...1.70

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LOW IDLE 1 Control Lever position degrees: 75...83 Setting point w/out bumper spring rpm : 350 Speed Rack travel in mm: 8.1 Testing: Speed : 100 rpm Minimum rack trave: 19.00 Speed rpm : 350 Rack travel in mm : 9.00...8.20 SET IDLE AUXILIARY SPRING Rack travel in mm: 2.00 TORQUE CONTROL Dimension a mm : 2.00 Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 10.70...10.80 2nd speed rpm : 750Rack travel in m: 10.70...10.80 rpm : 900 3rd speed Rack travel in m: 10.65...10.85 4th speed rpm : 500 Rack travel in m: 10.65...10.85 FUEL DELIVERY CHARACTERISTICS 1st version : 1100 Speed rom Del.quantity cm3/: 69.5...72.5 1000 s: (68.0...74.0) Spread cm3 : 3.501000 s: (6.0) : 750 Speed non Del.quantity cm3/ : 57.0...61.0 1000 s: (55.0...63.0) Spread cm3 : 5.00 1000 s: (7.00) Speed : 900 non Del.quantity cm3/: 65.0...70.0 1000 s: (62.5...72.5) : 500 Speed rpm Del.quantity cm3/: 38.0...42.5 1000 s: (35.5...45.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 9.75

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 78.0...88.0 1000 s: (75.0...91.0)

LOW IDLE

Speed rpm : 350

Rack travel in mm : 8.00...8.20 Del.quantity cm3/: 9.0...13.0 1000 s: (7.0...15.0)

Spread cm3 : 3.501000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Firing order : 1-5-3-6-2-4 Note remarks Test sheet Phasing : 0-60-120-180-240-300 Edition : 10.02.94 Replaces Tolerance + - ° : 0.50 (0.75) Test oil : ISO-4113 BASIC SETTING Combination no. : 0 403 476 0370 1st speed rpm: 1150 Injection pump Pump designation : PES6MW100/720RS1/130 Rack travel in mm : 11.45...11.55 EP type number : 0 413 406 122 Governor Del.quantity cm3/: 8.15...8.45 Governor design. : RSV350...1300Mw0A318 Governer no. : 0 420 085 052 100 s: (8.0...8.6) Customer-spec. information Spread cm3 : 0.3Customer : MB-NFZ 100 s: (0.6) Engine : OM 366 A rpm : 350.02nd speed Rack travel in mm: 8.0...8.2 1st version kW : 112.0 Rated speed : 2600 Del.quantity cm3/: 0.9...1.3 100 s: (0.7...1.5) TEST BENCH REQUIREMENTS Spread cm3 : 0.3100 s: (0.5) Test oil inlet temp. °C : 38...42 GUIDE SLEEVE POSITION Control-lever position Overflow valve Degree: -3 : 1 417 413 047 rpm : 800 Rack travel in mm : 0.30...1.00 Inlet press., bar: 1.50 FULL LOAD DELIV. AT FULL LOAD STOP Test nozzle holder assembly : 0 681 343 009 1st version Speed rpm : 1150 Opening Del.quantity : 81.5...84.5 : 172...175 1000 : (80.0...86.0) pressure, bar : 3.50 Spread cm3 1000 : (6.00) Test Lines : 1 680 750 015 RATED SPEED Outside diameter x Wall thickness 1st version x Length mm : 6.00x1.50x600 Setting point: (A) Injection pump setting values rom Insp. values in parentheses Rack travel in mm : 0.65 Set equal delivery quant. per values Testing: 1st rack travel in: 10.50 BEGINNING OF DELIVERY rpm : 1190...1200 Speed Test pressure, bar: 30...32 2nd rack travel in: 4.00 rpm : 1245...1275 Speed Prestroke mm : 3.70...3.80 4th rack travel in: 1350 : (3.65...3.85) Speed : 0.30...1.70 rom

Rack travel in mm : 9.00...12.00

LOW IDLE 1 Control Lever

position degrees: 75...83

Setting point w/out bumper spring

rpm : 350 Speed Rack travel in mm: 8.1

Testing:

Speed : 100 rpm Minimum rack trave: 19.00 rpm : 350 Speed

Rack travel in mm : 8.00...8.20

SET IDLE AUXILIARY SPRING Rack travel in mm: 2.00

TORQUE CONTROL

Dimension a mm : 2.00

Torque control curve - 1st version

1st speed rpm : 1150

Rack travel in m: 11.45...11.55

rpm : 750 2nd speed

Rack travel in m: 11.95...12.05

rpm : 950 3rd speed

Rack travel in m: 11.65...11.85

4th speed rpm : 500

Rack travel in m: 12.00...12.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed : 1150 rom

Del.quantity cm3/: 81.5...84.5

1000 s: (80.0...86.0)

cm3 : 3.50 Spread

1000 s: (6.0)

: 750 Speed rom

Del.quantity cm3/: 75.5...79.5

1000 s: (73.5...81.5)

Spread cm3 : 5.00

1000 s: (7.00)

: 950 Speed רוסח

Del.quantity cm3/: 79.0...84.0

1000 s: (76.5...86.5)

: 500 Speed man

Del.quantity cm3/: 65.5...70.5 1000 s: (63.0...73.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 10.50

Speed rpm : 1190...1200

STARTING FUEL DELIVERY

Speed rpm : 10C Del.quantity cm3/ : 78.0...88.0

1000 s: (75.0...91.0)

LOW IDLE

Speed rpm : 350

Rack travel in mm : 8.00...8.20

Del.quantity cm3/: 9.0...13.0 1000 s: (7.0...15.0)

Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : MB 6,0 H 1 : 14.02.94 Test sheet Edition Phasina Replaces : 05.91 Test oil : ISO-4113 Combination no. : 0 403 476 080A Injection pump 1st speed Pump designation : PES6MW100/720RS1191 EP type number : 0 413 406 179 Governor Governor design. : RSV350...1300MW0A329 : 0 420 085 136 Coverner no. Customer spec. information Spread : MB-NFZ Customer Engine : OM 366 LA 2nd speed 1st version kW : 165.0 Rated speed : 2600 TEST BENCH REQUIREMENTS Spread Test oil inlet temp. °C : 38...42 Overflow valve : 1 419 992 198 Speed Inlet press., bar: 1.50 Test nozzle holder : 0 681 343 009 assembly Speed **Opening** : 172...175 pressure, bar Spread Test Lines : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values Speed BEGINNING OF DELIVERY Test pressure, bar: 30...32

: 3.50...3.60

: (3.45...3.65)

Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4: 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) BASIC SETTING rpm: 1150 Rack travel in mm : 14.80...14.90 Del.quantity cm3/: 12.20...12.40 100 s: (12.0...12.6) cm3 : 0.3100 s: (0.6) rpm : 350.0 Rack travel in mm: 6.0...6.2 Del.quantity cm3/: 0.9...1.3 100 s: (0.6...1.5) cm3 : 0.3100 s: (0.5) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Rack travel in mm : 0.30...1.00 FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1150 Aneroid pressure h: 1000 Del.quantity : 122.0...124.0 1000 : (120.0...126.0) : 3.50 cm3 1000 : (6.00) RATED SPEED 1st version Control lever position degrees: 105...113 Setting point: rpm Rack travel in mm: 0.65 Testing: 1st rack travel in: 13.85 rpm : 1180...1190 Speed 2nd rack travel in: 4.00

Prestroke mm

rom : 1270...1310 Speed 4th rack travel in: 1350

rpm : 0.30...1.70Speed

LOW IDLE 1 Control lever

position degrees: 75...83 Setting point w/out bumper spring

rpm : 350 Rack travel in mm : 6.1

Testina:

rpm : 100 Speed Minimum rack trave: 19.00 rpm : 350

Rack travel in mm : 6.00...6.20

SET IDLE AUXILIARY SPRING Rack travel in mm : 2.00

Aneroid/Altitude Compensator Test

1st version Setting

Speed : 500 rpm Pressure hPa : 1000

Rack travel mm : 14.80...14.90

Measurement

Speed 1/min : 500

1st pressure hPa : -

Rack travel in m: 12.10...12.30

2nd pressure hPa : 350

Rack travel in m: 12.90...13.10

3rd pressure hPa : 500

Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1000 Speed rpm : 1150

Del.quantity cm3/: 122.0...124.0 1000 s: (120.0...126.0)

cm3 : 3.50 Spread

1000 s: (6.0)

Aneroid pressure h: 1000 Speed : 600 rpm

Del.quantity cm3/: 118.5...121.5

1000 s: (116.0...124.0) cm3 : 5.00 1000 s: (7.00)

Aneroid pressure h: -

rpm : 500 Speed

Del.quantity cm3/: 69.0...71.0

1000 s: (67.0...73.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 13.85

Speed rpm : 1180...1190

STARTING FUEL DELIVERY

rpm : 100 Speed

Del.quantity cm3/: 100.0...110.0 1000 s: (97.0...113.0)

LOW IDLE

Speed rpm : 350

Rack travel in mm : 6.00...6.20 Del.quantity cm3/: 9.0...13.0 1000 s: (6.5...15.5)

cm3 : 3.50 Spread

1000 s: (5.00)

Remarks:

* Read off speed set under 1. Add 80...88 min-1 to this speed. The control-rod travel under 2. must be attained with the calculated speed profile.

Spread

Note remarks

Test sheet

Edition

Replaces

: 14.02.94

Test oil

: ISO-4113

: MAN

Combination no. : 0 403 476 134

Injection pump

Pump designation : PES6MW100/320RS1236

EP type number

: 0 413 406 231

Governor

Governor design. : RSV325...750MW1A802-

Governer no.

: 0 420 085 237

Customer—spec. information Customer

: MAN

Engine

: D 0826 LXE20

1st version kW

: 151.0

Rated speed

: 1500

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C

: 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

assembly

: 1 688 901 101

Opening

pressure, bar

: 207...210

Orifice plate

diameter mm

: 0.6

Test Lines

: 1 680 750 008

Outside diameter

x Wall thickness

x Length mm

: 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values _

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

E06

Prestroke mm : 3.20...3.30

: (3.15...3.35)

Rack travel in mm : 14.0...16.0

Firing order

: 1-5-3-6-2-4

Phasing

: 0-60-120-180-240-300

Tolerance + - °

: 0.50 (0.75)

BASIC SETTING

1st speed

Spread

Spread

rpm: 700

Rack travel in mm : 13.60...13.80

Del.quantity cm3/: 19.1...19.3

100 s: (18.8...19.6)

cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 325.0

Rack travel in mm : 6.60...7.40 Del.quantity cm3/: 6.3...6.7

100 s: (6.15...6.95)

cm3 : 0.6

100 s: (0.9)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

rpm : 800 Rack travel in mm : 0.30...1.00

Governor spring pre-tension Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

rpm : 700

Aneroid pressure h: -

Del.quantity

: 191.0...193.0

1000 : (188.0...196.0)

Spread

cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 84...92

Setting point:

Speed

rpm

: 800

Rack travel in mm: 0.65 Remarks: Testing: : MAN #3-7231 1st rack travel in: 12.70 rom : 750...755 Speed 2nd rack travel in: 4.00 rpm : 780...788 Speed 4th rack travel in: 950 rpm : 0.30...1.70Speed LOW IDLE 1 Control lever position degrees: 64...72 Setting point w/out bumper spring Speed rom : 325 Rack travel in mm: 7.0 Speed : 325 rpm Rack travel in mm : 6.60...7.40 Rack travel in mm : 2.00 Speed rpm : 310...370 FUEL DELIVERY CHARACTERISTICS 1st version : 700 Speed rpm Del.quantity cm3/: 191.0...193.0 1000 s: (188.0...196.0) Spread cm3 : 4.00 1000 s: (7.5) Speed rpm : 784 Del.quantity cm3/ : 18.0...22.0 1000 s: (15.5...24.5) Spread cm3 : 3.501000 s: (6,00) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 12.70 Speed rpm : 750...755 STARTING FUEL DELIVERY LOW IDLE Speed rpm : 325 Rack travel in mm : 6.60...7.40 Del.quantity cm3/: 63.0...67.0 1000 s: (61.5...69.5) cm3 : 6.00 Spread 1000 s: (9.00)

Note remarks

Test sheet

: MAN

Edition Replaces : 14.02.94

Test oil

: ISO-4113

Combination no. : 0 403 486 105

Injection pump

Pump designation : PES6MW100/321RS1231

EP type number

: 0 413 406 225

Governor

Governor design.

: RSV300...1100Mw0A343

Governer no.

: 0 420 085 209

Customer-spec. information Customer

: MAN

Engine

: D0826LE 522

1st version kW

Rated speed

: 154.0 : 2200

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

assembly

: 0 681 343 009

Opening

pressure, bar

: 172...175

Test lines

: 1 680 750 008

Outside diameter

x Wall thickness

x Length mm

: 6.00x2.00x600

(A) Injection pump setting values

Insp. values in parentheses Set equal delivery quant.

per values __

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm

: 3.50...3.60

: (3.45...3.65)

E08

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing

: 0-60-120-180-240-300

Tolerance + - °

: 0.50 (0.75)

BASIC SETTING

1st speed

rpm: 1100

Rack travel in mm : 12.00...12.10

Del.quantity cm3/: 14.2...14.4

100 s: (13.9...14.7)

Spread

2nd speed

cm3 : 0.4

100 s: (0.7)

rpm : 300.0

Rack travel in mm: 4.9...5.1

Del.quantity cm3/: 0.9...1.3

Spread

Speed

100 s: (0.6...1.5)

cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

Spread

rpm : 1100

Aneroid pressure h: 1000

Del.quantity

: 142.0...144.0 1000 : (139.0...147.0)

: 4.00 cm3

1000 : (7.50)

RATED SPEED

1st version

Control Lever

position degrees: 100...108

Setting point:

Speed

rpm : 800

Rack travel in mm: 0.65

Testing:

1st rack travel in: 11.00 Spread cm3 : 4.00Speed rpm: 1150...1160 2nd rack travel in: 4.00 1000 s: (7.5) Aneroid pressure h: 1000 Speed rpm: 1230...1260 4th rack travel in: 1350 Speed G06: man Del.quantity cm3/: 144.0...148.0 Speed rpm : 0.30...1.70 1000 s: (141.0...151.0) Spread cm3 : 6.00LOW IDLE 1 1000 s: (9.00) Control lever Aneroid pressure h: 1000 position degrees: 72...80 rpm : 600 Speed Del.quantity cm3/: 148.0...152.0 1000 s: (145.0...155.0) Setting point w/out bumper spring rpm : 300 Speed Rack travel in mm: 5.1 Aneroid pressure h: rpm : 500 Speed Testina: Del.quantity cm3/: 75.0...77.0 Speed rpm : 100 1000 s: (73.0...79.0) Minimum rack trave: 19.00 rpm : 300 Speed Rack travel in mm : 4.90...5.10 **BREAKAWAY** SET IDLE AUXILIARY SPRING 1st version Rack travel in mm : 2.00 1mm rack travel less than TORQUE CONTROL full load rack tr: 11.00 Torque control curve - 1st version Speed rpm . 1150...1160 1st speed rpm : 1100 Rack travel in m: 12.00...12.10 STARTING FUEL DELIVERY 2nd speed rpm : 900 Rack travel in m: 12.30...12.40 3rd speed rpm : 600 rpm : 100 Speed Rack travel in m: 12.30...12.50 Del.quantity cm3/: 120.0...130.0 1000 s: (117.0...133.0) Aneroid/Altitude Compensator Test LOW IDLE Speed rpm : 300 1st version Rack travel in mm : 4.90...5.10 Setting Del.quantity cm3/: 9.0...13.0 Speed : 500 1000 s: (6.5...15.5) rpm hPa : 1000 Pressure cm3 : 3.50 Spread Rack travel mm : 12.30...12.50 1000 s: (5.50) Measurement Remarks: 1/min: 500 Speed : MAN #3-7263 1st pressure hPa : -Rack travel in m: 9.40...9.50 2nd pressure hPa : 150 Rack travel in m: 9.70...9.80 3rd pressure hPa : 600 Rack travel in m: 11.60...11.90 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 Speed rpm : 1100 Del.quantity cm3/ : 142.0...144.0 1000 s: (139.0...146.0)

Note remarks

Test sheet : MAN

Edition : 14.02.94

Replaces

Test oil : ISO-4113

Combination no. : 0 403 486 106

Injection pump

Pump designation : PES6MW100/321RS1232

EP type number : 0 413 406 226

Governor

Governor design. : RSV300...1150MW0A343

: 0 420 085 210 Governer no.

Customer-spec. information Customer : MAN

Engine : DO826LE 523

1st version kW : 154.0 : 2300 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 18...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

: 0 681 343 009 assembly

Openina

pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values ____

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

: 3.50...3.60 Prestroke mm

: (3.45...3.65)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasina : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

1st speed rpm: 1150

Rack travel in mm : 13.00...13.10

Del.quantity cm3/: 15.9...16.1

100 s: (15.6...16.4)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 300.0 Rack travel in mm : 5.4...5.6 Del.quantity cm3/ : 1.3...1.7

100 s: (1.15...1.95)

Spread cm3 : 0.3100 s: (0.5)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

rpm : 800 Speed

Rack travel in mm : 0.30...1.00

Governor spring pre-tension Click setting x : 5.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1150 Aneroid pressure h: 1200

Del.quantity : 159.0...161.0

1000 : (156.0...164.0)

cm3 : 4.00 Spread 1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 100...108

Setting point:

Speed rpm : 800 Rack trave! in mm : 0.65

Testing:

1st rack travel in: 12.00 rpm : 1200...1210 Speed 2nd rack travel in: 4.00 rpm : 1290...1320 Speed 4th rack travel in: 1400 Speed rom : 0.30...1.70LOW IDLE 1 Control lever position degrees: 73...81 Setting point w/out bumper spring rpm : 300 Rack travel in mm: 5.5 Testing: Speed rom : 100 Minimum rack trave: 19.00 Speed rpm : 300 Rack travel in mm: 5.4...5.6 SET IDLE AUXILIARY SPRING Rack travel in mm : 2.00 TORQUE CONTROL Torque control curve - 1st version rpm : 1150 1st speed Rack travel in m: 13.0...13.10 2nd speed rpm : 925 Rack travel in m: 13.30...13.50 3rd speed rpm : 600 Rack travel in m: 13.30...13.50 4th speed rpm : 500 Rack travel in m: 9.40...9.50 Aneroid/Altitude Compensator Test 1st version Setting Speed : 500 rpm Pressure hPa : 1200 : 13.00...13.10 Rack travel mm Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 9.40...9.50 2nd pressure hPa : 150 Rack travel in m: 9.70...9.80 3rd pressure hPa : 750 Rack travel in m: 12.20...12.50 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 rpm : 1150 Speed

Del.quantity cm3/: 159.0...161.0 1000 s: (156.0...164.0) Spread cm3 : 4.001000 s: (7.5) Aneroid pressure h: 1200 : 925 Speed rom Del.quantity cm3/: 160.0...164.0 1000 s: (157.0...167.0) cm3 : 6.00 Spread 1000 s: (9.00) Aneroid pressure h: 1200 Speed : 600 rpm Del.quantity cm3/: 158.0...162.0 1000 s: (155.0...165.0) Aneroid pressure h: rpm : 500 Speed Del.quantity cm3/: 75.0...77.0 1000 s: (73.0...79.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 12.00

Speed rpm : 1208...1210

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 120.0...130.0 1000 s: (117.0...133.0)

LOW IDLE

Remarks:

: MAN #3-7262

Note remarks

Test sheet : MAN

Edition : 14.02.94

Replaces

: ISO-4113 Test oil

Combination no. : 0 403 486 107

Injection pump

Pump designation : PES6MW100/321RS1208

EP type number : 0 413 406 199

Governor

Governor design. : RSV350...900MW1A360

: 0 420 085 238 Governer no.

Customer-spec. information

Customer : MAN

Engine : D0826LE 101

1st version kW : 140.0

Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil

intet temp. *C : 18...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60

: (3.45...3.65)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasina : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

BASIC SETTING

rpm: 870 1st speed

Rack travel in mm : 13.65...13.75

Del.quantity cm3/: 13.7...13.9

100 s: (13.4...14.2)

Spread cm3 : C.4

100 s: (0.7)

rpm : 350.02nd speed Rack travel in mm: 4.4...4.6 Del.quantity cm3/: 1.1...1.5

100 s: (0.85...1.75)

Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension Click setting x : 3.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

rpm : 870 Speed

Del.quantity : 137.0...139.0

1000 : (134.0...142.0) Spread

cm3 : 4.00 1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 87...95

Setting point:

Speed rpm Rack travel in mm: 0.65

Testing:

1st rack travel in: 12.70

Speed rpm : 915...925

2nd rack travel in: 4.00 rpm : 955...965 Speed 4th rack travel in: 1050 Speed rpm : 0.30...1.70 LOW IDLE 1 Control lever position degrees: 64...72 Setting point w/out bumper spring rpm : 350 Rack travel in mm: 4.5 Testing: Speed rpm : 100 Minimum rack trave: 19.00 rpm : 300 Speed Rack travel in mm: 4.4...4.6 SET IDLE AUXILIARY SPRING rpm : 500 Speed Rack travel in mm: 4.9...5.1 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 870 Del.quantity cm3/ : 137.0...139.0 1000 s: (134.0...142.0) Spread cm3 : 4.00 1000 s: (7.5) Speed rpm : 500 Del.quantity cm3/ : 126.0...130.0 1000 s: (123.0...133.0) Spread cm3 : 6.00 1000 s: (9.00) Speed rpm : 700 Del.quantity cm3/: 134.0...138.0 1000 s: (131.0...141.0) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 12.70 Speed rpm : 915...925 STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/: 130.0...150.0 1000 s: (127.0...153.0) LOW IDLE

rpm : 350

Rack travel in mm: 4.4...4.6

Speed

E13

Del.quantity cm3/: 11.0...15.0 1000 s: (8.5...17.5) Spread cm3 : 3.50 1000 s: (5.50)

Remarks:

: MAN #3-7310

Note remarks

Test sheet : MAN

Edition : 15.02.94

Replaces

: ISO-4113 Test oil

Combination no. : 0 403 486 108

Injection pump

Pump designation : PES6MW100/321RS1208

EP type number : 0 413 406 199

Governor

Governor design. : RSV350...900Mw1A360-

Governer no. : 0 420 085 239

Customer-spec, information

Customer

: MAN

Engine : D0826LE 102

1st version kW : 154.0

Rated speed : 1800

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 18...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

assembly : 0 681 343 009

Openina

pressure, bar : 172...175

Test lines : 1 680 750 008

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 30...32

Prestroke mm : 3.50...3.60

: (3.45...3.65)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

BASIC SETTING

rpm: 870 1st speed

Rack travel in mm : 14.75...14.85

Del.quantity cm3/: 15.6...15.8

100 s: (15.3...16.1)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 350.0Rack travel in mm: 4.4...4.6

Del.quantity cm3/: 1.1...1.5

100 s: (0.85...1.75)

cm3 : 0.3 100 s: (0.5) Spread

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

Speed rpm : 800

Rack travel in mm : 0.30...1.00

Governor spring pre-tension

Click setting x : 3.20

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 870

: 156.0...158.0 Del.quantity

1000 : (153.0...161.0)

Spread cm3 : 4.00

1000 : (7.50)

RATED SPEED

1st version

Control lever

position degrees: 87...95

Setting point:

rom

Rack travel in mm : 0.65

Testina:

1st rack travel in: 13.80

rpm : 915...925 Speed 2nd rack travel in: 4.00 rpm : 965...975 Speed 4th rack travel in: 1050 Speed rpm : 0.30...1.70 LOW IDLE 1 Control lever position degrees: 64...72 Setting point w/out bumper spring Speed rpm : 350 Rack travel in mm: 4.5 Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm: 300 Rack travel in mm: 4.4...4.6 SET IDLE AUXILIARY SPRING Speed rpm : 350 Rack travel in mm: 4.9...5.1 FUEL DELIVERY CHARACTERISTICS 1st version rpm : 870 Speed Spread cm3 : 4.00

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 13.80 Speed rpm : 915...925

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 130.0...150.0 1000 s: (127.0...153.0)

LOW IDLE

Speed rpm: 350

Rack travel in mm: 4.4...4.6 Del.quantity cm3/: 11.0...15.0 1000 s: (8.5...17.5)

Spread cm3 : 3.50 1000 s: (5.50)

Remarks:

: MAN #3-7311

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MAN Edition : 15.02.94 Replaces Test oil : ISO-4113 Combination no. : 0 403 486 109 Injection pump Pump designation : PES6MW100/321RS1208 EP type number : 0 413 406 199 Governor Governor design. : RSV350...1000MW1A360 : 0 420 085 240 Governer no. Customer-spec. information Customer : MAN : DO826LE 103 Engine 1st version kW : 161.0 Rated speed : 2000 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 18...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 Test Lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values ____

Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance + - * : 0.50 (0.75) BASIC SETTING rpm: 970 1st speed Rack travel in mm : 14.75...14.85 Del.quantity cm3/: 14.8...15.0 100 s: (14.5...15.3) Spread cm3 : 0.4100 s: (0.7) 2rid speed rpm : 350.0Rack travel in mm: 4.4...4.6 Del.quantity cm3/: 1.1...1.5 100 s: (0.85...1.75) cm3 : 0.3Spread 100 s: (9.5) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Speed Rack travel in mm : 0.30...1.00 Governor spring pre-tension Click setting x : 3.20FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 970 Speed : 148.0...150.0 Del.quantity 1000 : (145.0...153.0) : 4.00 cm3 Spread 1000 : (7.50) RATED SPEED 1st version Control lever position degrees: 87...95 Setting point: Speed rom : 800 Rack travel in mm: 0.65

Testing:

1st rack travel in: 13.80

BEGINNING OF DELIVERY

Prestroke mm

Test pressure, bar: 30...32

: 3.50...3.60

: (3.45...3.65)

rpm : 1020...1030 Speed 2nd rack travel in: 4.00 rpm : 1080...1090 Speed 4th rack travel in: 1150 Speed rpm : 0.30...1.70 LOW IDLE 1 Control lever position degrees: 64...72 Setting point w/out bumper spring rpm : 350 Rack travel in mm: 4.5 Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 300 Rack travel in mm: 4.4...4.6 SET IDLE AUXILIARY SPRING Speed rpm : 350 Rack travel in mm: 4.9...5.1 FUEL DELIVERY CHARACTERISTICS 1st version rpm : 970 Speed Del.quantity cm3/: 148.0...150.0 1000 s: (145.0...153.0) Spread cm3 : 4.00 1000 s: (7.5) Speed : 500 MCI Del.quantity cm3/: 139.0...143.0 1000 s: (136.0...146.0) Spread cm3 : 6.00 1000 s: (9.00) rpm : 700 Speed Del.quantity cm3/: 147.0...151.0 1000 s: (145.0...153.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 13.80 rpm : 1020...1030 Speed STARTING FUEL DELIVERY rpm : 100 Del.quantity cm3/: 130.0...150.0 1000 s: (127.0...153.0)

: 350

rom

LOW IDLE

Speed

E17

Rack travel in mm : 4.4...4.6
Del.quantity cm3/: 11.0...15.0
1000 s: (8.5...17.5)
Spread cm3 : 3.50
1000 s: (5.50)

Remarks:

: MAN #3-7312

Note remarks

Test sheet : CUM Edition : 02.94

Replaces

Test oil : ISO-4113

Combination no. : 9 400 085 362

Injection pump

Pump designation : PES6A100b32G/3RS2827

EP type number : 9 400 084 030

Governor

Governor design. : RQV350...1100AB1276R

: 9 420 080 354 Governer no.

Customer-spec. information Customer : CUMMINS

Engine : 6 CT 8.3

1st version kW : 160.0 : 2200 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.70...2.80 : (2.65...2.85)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00 & maximum rack tra: 3.50...4.50 Difference ° CS : 2

BASIC SETTING

rpm: 1100 1st speed

Rack travel in mm : 12.10...12.20

Del.quantity cm3/: 12.9...13.1

100 s: (12.7...13.3)

cm3 : 0.3 Spread

100 s: (0.8)

rpm : 350.0 2nd speed Rack travel in mm: 4.9...5.1 Del.quantity cm3/: 0.7...1.1

100 s: (0.4...1.3)

Spread cm3 : 0.5100 s: (0.9)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 1150

travel mm : 7.40...7.60

rpm : 250 2nd speed

travel mm : 0.40...0.90

3rd speed rpm : 350

: 1.60...2.10 travel mm

4th speed rpm : 600

: 4.00...4.50 travel mm

: 1350 5th speed rpm

: 9.10...9.60 travel mm

GUIDE SLEEVE POSITION Control-lever position

Degree: -1

Speed rpm : 1240

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version Speed rpm : 1100 Aneroid pressure h: 1000 Del.quantity : 129.0...131.0 1000 : (127.0...133.0) Spread cm3 : 3.50 1000 : (8.00) RATED SPEED 1st version Control lever position degrees: 109...117 Setting point: Speed rpm : 1240 Rack travel in mm: 16.5 Testing: 1st rack travel in: 11.10 rpm : 1145...1155 Speed 2nd rack travel in: 4.00 Speed : 1285...1315 riom 4th rack travel in: 1450 Speed rom : 0.00...1.00LOW IDLE 1 Control lever position degrees: 68...76 Setting point w/out bumper spring Speed rpm : 350 Rack travel in mm : 5.0 Testina: Speed rpm : 100 Minimum rack trave: 9.00 : 350 nom Rack travel in mm : 4.90...5.10 CONSTANT REGULATION Speed rpm : 300...500 TORQUE CONTROL Dimension a mm :? Torque control curve - 1st version rpm : 1100 1st speed Rack travel in m: 12.10...12.20 rpm : 700 2nd speed Rack travel in m: 12.10...12.20 Aneroid/Altitude Compensator Test 1st version Settina Speed : 500 rom Pressure hPa : 1000

Rack travel mm : 12.10...12.20

Measurement 1/min: 500 Speed 2nd pressure hPa : 320 Rack travel in m: 0.60...0.70 3rd pressure hPa : 600 Rack travel in m: 2.00...2.20 START CUT-OUT 1/min: 270 (290) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1000 rpm : 700 Speed Del.quantity cm3/: 133.5...137.5 1000 s: (131.5...139.5) Speed rpm : 500 Del.quantity cm3/: 94.5...96.5 1000 s: (92.5...98.5) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 11.10 Speed rpm : 1145...1155 STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/: 164.0...180.0 1000 s: (161.0...183.0) Rack travel in mm: 19.00...21.00 LOW IDLE Speed rpm : 350 Rack travel in mm : 4.90...5.10 Del.quantity cm3/: 7.0...11.0 1000 s: (4.5...13.5) Spread cm3 : 5.50 1000 s: (9.00) Remarks: : C..D.C. # 335 5245 Start-of-delivery mark 9° cam angle

after start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : CUM Edition : 02.94 Replaces Test oil : ISO-4113 Combination no. : 9 400 087 481 Injection pump Pump designation : PES6P120A320/3RS3264 EP type number : 9 400 087 075 Governor Governor design. : RQV350/870...900PA11 11 : 9 420 080 356 Governer no. Customer-spec. information Customer : CUMMINS **Engine** : 6CTA 1st version kW : 207.0 Rated speed : 1800 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder assembly : 1 688 901 105 **Opening** pressure, bar : 207...210 Test lines : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY Test pressure, bar: 25...27

Prestroke mm : 3.45...3.55 : (3.40...3.60) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - * : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 870

Rack travel in mm : 12.30...12.40

Del.quantity cm3/: 21.5...21.7

100 s: (21.2...22.0)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 350.0Rack travel in mm: 6.1...6.3 Del.quantity cm3/: 0.7...1.3 100 s: (0.4...1.6) Spread

cm3 : 0.8100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL rpm : 910 1st speed : 5.50...6.00 travel mm 250 2nd speed rpm

travel mm : 0.50...1.00 3rd speed rpm : 400

travel mm : 2.50...3.00 4th speed mqn : 700

travel mm : 4.40...4.60

5th speed rpm : 980 travel mm : 8.60...9.10

GUIDE SLEEVE POSITION Control-lever position Degree: -1

Speed rpm : 945

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 870

Del.quantity : 215.0...217.0 1000 : (212.0...220.0)

Spread cm3 : 5.001000 : (9.00) RATED SPEED 1st version Control lever position degrees: 105...113 Setting point: rpm : 945 Speed Rack travel in mm: 16.5 4th rack travel in: 1050 rpm : 0.00...1.00 Speed LOW IDLE 1 Control lever position degrees: 69...77 Setting point w/out bumper spring Speed rpm : 350 Rack travel in mm: 6.2 Testina: Speed rpm : 100 Minimum rack trave: 10.00 rpm : 350 Speed Rack travel in mm : 6.10...6.30 CONSTANT REGULATION Speed rpm : 300...450 TORQUE CONTROL Dimension a mm : ? Torque control curve - 1st version 1st speed rpm : 870 Rack travel in m: 12.30...12.40 2nd speed rpm : 500 Rack travel in m: 12.30...12.40 START CUT-OUT Speed 1/min : 270 (290) STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.10...6.30
Del.quantity cm3/: 7.0...13.0
1000 s: (4.0...16.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:
: C.D.C. # 335 5248
Sliding sleeve pre-travel = 6.5 mm

BOSCH INU. PUMP TEST SPECIFICATIONS Note remarks Test sheet : CUM Edition : 02.94 Replaces

Combination no. : 9 400 087 482

Injection pump

Test oil

Pump designation : PES6P120A320/3RS3254 : 9 400 087 075

: ISO-4113

EP type number

Governor Governor design. : RQV350/720...750PA11

12

Governer no. : 9 420 080 357

Customer-spec. information Customer : CUMMINS

: 6CTA Engine

1st version kW : 180.0 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Test nozzle holder

assembly : 1 688 901 105

Opening

pressure, bar : 207...210

Test lines : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6.00x1.50x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY Test pressure, bar: 25...27

Prestroke mm : 3.45...3.55

: (3.40...3.60)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 720

Rack travel in mm : 11.80...11.90

Del.quantity cm3/: 21.4...21.5

100 s: (21.1...21.9)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 350.0 Rack travel in mm : 5.7...5.9 Del.quantity cm3/: 0.9...1.5

100 s: (0.6...1.8)

Spread cm3 : 0.8100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 820

: 8.00...8.50 travel mm

2nd speed : 300 rpm

travel mm : 0.80...1.30

3rd speed : 420 rpm

travel mm : 3.10...3.60

: 600 4th speed rpm

: 4.40...4.60 travel mm

5th speed rpm : 770

travel mm : 8.00...8.50

GUIDE SLEEVE POSITION Control-lever position

Degree: -1

rpm : 805 Speed

Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 720

Del.quantity : 214.0...216.0

1000 : (211.0...219.0)

Spread cm3 : 5.00

1000 : (9.00)

RATED SPEED

1st version Control lever

position degrees: 102...110

Setting point:

Speed rpm : 805 Rack travel in mm: 16.5 4th rack travel in: 900

rpm : 0.00...1.00Speed

LOW IDLE 1 Control lever

position degrees: 67...75

Setting point w/out bumper spring

rpm : 350 Rack travel in mm: 5.8

Testing:

Speed rpm : 100 Minimum rack trave: 10.00 Speed rpm : 350 Rack travel in mm : 5.70...5.90

CONSTANT REGULATION

Speed rpm : 300...430

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 720

Rack travel in m: 11.80...11.90

2nd speed rpm : 500

Rack travel in m: 11.80...11.90

START CUT-OUT

Speed 1/min: 270 (290)

STARTING FUEL DELIVERY

Speed rpm : 100

Del.quantity cm3/: 270.0...290.0 1000 s: (266.0...294.0)

Rack travel in mm : 19.00...21.00

LOW IDLE

rpm : 350

Rack travel in mm : 5.70...5.90 Del.quantity cm3/: 9.0...15.0 1000 s: (6.0...18.0)

cm3 : 8.00 Spread

1000 s: (12.00)

Remarks:

: C.D.C. # 335 5249

Start-of-delivery mark/lock = 8.0° angular displacement of the cam after

start of delivery of cylinder 1.

Note inst. in remarks column

Test scheet : VMA Edition : 02.94 : 13.07.88 replaces Calibrating oil: : ISO-4113

Injection pump : VE4/10F2100L168-2 : 0 460 404 051 Type number

Customer Part-No. :

Customer-specific information

Customer : VM

Engine : HR 492 HT

Power KW: 76 1/min: 2100 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Openina |

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Speed Charge press. hPa: 800

Setting value mm: 4.60...5.00

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1500 Speed tharge press hPa: 300

Setting value bar: 4.80...5.40

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1500 Charge press. hPa: 800 Del. quantity cm3/ 1000s.: 56.50...57.50

Shutoff

electromagnet Volt: 12 cm3/: 3.0Dispersion 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 600

Del. quantity cm3/ 1000s.: 45.50...46.50

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

1/min: 400 Speed Del. quantity cm3/ 1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.0 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2300 Charge press hPa: 800 Del. quantity cm3/ 1000s.: 27.00...33.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 37.00...67.00 mind 1000s.: 37.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1500	+ Overlow quantity at overflow valve:
Charge press hPa: -	†
Injaty. cm3/ difference 1000s.: - 8.014.0 "	† 1st speed 1/min: 600
difference 1000S.: - 8.014.0 "	Charge press. hPa: 800
Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
TD-rravel dif.measurement	+ Overflow : 41.7086.20
correttore anticipo injezione (SV)	quantity cm3/10s: (26.70101.20)
1. Speed 1/min: 1500	+ 2nd speed 1/min: 2100
Charge press hPa: -	+ Charge press. hPa: 800
TD-travel	+ Shutoff
difference mm: - 0.91.1 "	- electromagnet Volt: 12
Shutoff	Overflow : 55.60139.00
electromagnet Volt: 12	quantity cm3/10s: (40.60154.00)
Inspection pump test specifications	Delivery-quant. and breakaway char.:
Test specifications in parentheses	1
Timing device characteristic:	1nd speed 1/min: 700
	Charge-air pressure-setting
2nd speed 1/min: 2100	+ point hPa: 450
Charge press hPa: 800	† LDA-stroke mm: 6.1
TD travel mm: 7.608.40	- Shutoff
mm: (7.308.70)	+ electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 52.0053.00
electromagnet Volt: 12	† _ 1000s.: (50.00,55.00)
3rd speed 1/min: 1500	+ 3rd speed 1/min: 2450
Charge press hPa: 800	† Charge press. hPa: 800
TD travel mm: 4.605.00	+ Shutoff
mm: (4.105.50)	+ electromagnet Volt: 12
Shutoff	† Del. quantity cm3/: 1.009.00
electromagnet Volt: 12	Charge press. hPa: 800 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 1.009.00 1000s.: (0.509.50) 5th speed 1/min: 2300 Charge press. hPa: 800 Shutoff electromagnet Volt: 12
4th speed 1/min: 1000 Charge press hPa: 800	+ 5th speed 1/min: 2300
	+ Charge press. hPa: 800 + Shutoff
TD travel mm: 1.602.40 mm: (1.302.70)	T Shutori
Shutoff	+ electromagnet Volt: 12 + Del. quantity cm3/: 27.0033.00
electromagnet Volt: 12	1000S.: (26.0034.00)
ecoti diagrat rate, 12	9th speed 1/min: 2100
Supply-pump pressure characteristic:	Charge press. hPa: 800
	+ Shutoff
1st speed 1/min: 2100	electromagnet Volt: 12
Charge press. hPa: 800	Del. quantity cm3/: 48.9051.90
Supply-pump	1000s.: (47.4053.40)
pressure bar: 6.907.50	† 12th speed 1/min: 1500
Shutoff	+ Charge press. hPa: 800
electromagnet Volt: 12	Shutoff
2nd speed 1/min: 1500	+ electromagnet Volt: 12
Charge press. hPa: 800	bel. quyntity cm3/: 56.5057.50
Supply-pump	1000s.: (55.0059.00)
pressure bar: 4.805.40 Shutoff	18th speed 1/min: 600
electromagnet Volt: 12	+ Charge press. hPa: - + Shutoff
3rd speed 1/min: 600	
Charge press. hPa: 800	+ electromagnet Volt: 12 + Del. quantity cm3/: 45.5046.50
Supply—pump	100CS.: (43.5048.50)
pressure bar: 1.802.40	+ 20th speed 1/min: 600
Shutoff	Charge press. hPa: 800
electromagnet Volt: 12	Shutoff
	+ electromagnet Volt: 12

Del. quantity cm3/: 58.50...61.50 1000s.: -Mech. shutoff: Electr. shutoff: 1/min: 400 1st speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1st speed 1/min: 400 Shutoff 1000s.: (3.0) 1/min: 600 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...2.00 1000s.: (0.00...2.00) 1/min: 450 3rd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.50...8.50 1000s.: (0.50...10.50) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1st speed 1/min: 1500 Charge press. hPa: -Inj.-qty. cm3/ : -3.0...-5.0 # difference 1000s.: -Shutoff electromagnet Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1500 Charge press. hPa: -Supply pumppressure : -0.1...0.3 # difference bar: -Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1st speed 1/min: 400 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 45.00...65.00 1000s.: (45.00...65.00)

2nd speed 1/min: 550
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 37.00...57.00
1000S.: (37.00...57.00)

4th speed 1/min: 100
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 37.00...67.00
1000S.: (37.00...67.00)

Shutoff electromagnet:

Cut-in
min voltage
Rated voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Note inst. in remarks column

Test scheet : VMA : 02.94 Edition : 14.02.92 replaces Calibrating oil : ISO-4113

Injection pump : VE4/10F1600L352 Type number : 0 460 404 061

Customer Part-No. :

Customer-specific information

Customer : VM

: HR 494 HP Engine

KW: 53 Power 1/min: 1600 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mn: 840 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1200 Speed

Setting value mm: 1.90...2.30

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1200 Speed

Setting value bar: 4.80...5.40

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1200

Del. quantity cm3/

1000s.: 43.50...44.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 3.5 1000s.: (3.5)

Low-idle speed regulation

1/min: 400 Speed

Del. quantity cm3/ 1000s.: 11.50...15.50

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.5 1000s.: (3.5)

Full-load speed regulation

1/min: 1650

Del. quantity cm3/

1000s.: 27.00...33.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 45.00...85.00

1006s.: 45.00 mind

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1200

cm3/Inj.-qty.

difference 1000s.: - 10.0..-18.0 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1/min: 1200 1.Speed

TD-travel

mm: -0.9...-1.1 # difference

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses	- 5th speed 1/min: 1650 - Shutoff
Timing-device characteristic:	 electromagnet Volt: 12 Del. quantity cm3/: 27.0033.00 1000s.: (24.0036.00)
2nd speed 1/min: 1600 TD travel mm: 3.604.40	- 8th speed 1/min: 1625 - Shutoff
mm: (3.304.70)	electromagnet Volt: 12 Del. quantity cm3/: 33.5041.50
electromagnet Volt: 12 3rd speed 1/min: 1200 TD travel	- 9th speed 1/min: 1600 - Shutoff
mm: (1.402.80) Shutoff	electromagnet Volt: !2 Del. quantity cm3/: 37.0040.00 1000s.: (35.5041.50)
electromagnet Volt: 12	- 12th speed 1/min: 1200
4th speed 1/min: 1000	- Shutoff
TD travel mm: 0.701.50	- electromagnet Volt: 12
mm: (0.401.80)	- Del. quyntity cm3/: 43.5044.50
Shutoff	- 1000s.: (41.0047.00)
electromagnet Volt: 12	- 20th speed 1/min: 600 - Shutoff
Supply-pump pressure characteristic:	electromagnet Volt: 12 Del. quantity cm3/: 42.5045.50
2nd speed 1/min: 600 Supply-pump	- 1000s.: (41.0047.00)
pressure bar: 2.403.00 Shutoff	Mech. shutoff:Mech. Abstellung:
electromagnet Volt: 12 - 3rd speed 1/min: 1200	1st mod 1/min 4/00
Supply-pump	- 1st speed
pressure bar: 4.805.40	- 1000s.: (0.003.00)
Shutoff	- Shutoff
electromagnet Volt: 12	- electromagnet volt: 12
4th speed 1/min: 1600 Supply-pump	- - Electr. shutoff:
pressure bar: 6.407.00	-
electromagnet Volt: 12	- 1st speed
	- 1000s.: (0.003.00)
Overlow quantity at overflow valve:	Shutoffelectromagnet volt: -
1st speed 1/min: 600 Shutoff	- - Idle delivery:
electromagnet Volt: 12 Overflow : 41.7086.20	a fat anand Almin 100
Overflow : 41.7086.20 + quantity cm3/10s: (26.70101.20)	- 1st speed 1/min: 400 - Shutoff
2nd speed 1/min: 1600	- electromagnet Volt: 12
Shutoff - 12	- Del. quantity cm3/: 11.5015.50
electromagnet Volt: 12	1000s.: (9.5017.50)
quantity cm3/10s: (40.60154.00)	- Dispersion cm3/: 3.5 - 1000s.: (3.5)
Delivery-quant. and breakaway char.:	- 2nd speed 1/min: 550 - Shutoff
1	electromagnet Volt: 12
2nd speed 1/min: 1700	- Del. quantity cm3/: 0.003.00
Shutoff	- 1000s.: (0.003.00) - 3rd speed 1/min: 480
electromagnet Volt: 12	- Shutoff
Del. quantity cm3/: 0.003.00	electromagnet Volt: 12
10005.: (0.003.00)	

Del. quantity cm3/: 2.00...8.00 1000\$:: (1.00...9.00) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1200 1st speed Inj.-qty. cm3/ : -5.0...-7.0 " difference 1000s.: -Shutoff electromagnet Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1200 Supply pump-: -0.1...-0.3 " pressure difference bar: -Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1/min: 250 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 50.00...80.00 1000s.: (50.00...80.00) 1/min: 450 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.00...60.00 1000s.: (40.00...60.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 45.00...85.00 1000s.: (45.00...85.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 mm: 5.7...5.9 K KF MS mm: 0.6...1.0 SVS max. mm: 1.3 XK mm: 17.0...19.0 XL mm: 14.2...17.6 Remarks:

SCSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet : VMA Edition : 02.94 replaces : 03.12.92 Calibrating oil : ISO-4113

Injection pump : VE4/10F2100L414 Type number : 0 460 404 068

Customer Part-No. :

Customer-specific information

Customer

Engine : HR 425 CLI

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 022

Opening |

Pressure bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 × Wall thickness : 2.00 × Length mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000 Charge press. hPa: 1000

Setting value mm: 1.40...1.80

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1000 Charge press hPa: 1000

Setting value bar: 4.20...4.80

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1500 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 65.50...66.50

Shutoff

electromagnet Volt: 12 cm3/: 3.0 Dispersion 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 700

Del. quantity cm3/ 1000s.: 43.00...44.00

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

1/min: 450

Del. quantity cm3/

1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.0 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2300 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 40.00...46.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 45.00...75.00

1000s.: 45.00 mind

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Ini.-qty.dif.measurement:

1/min: 1500 Speed Charge press hPa: 1000

Inj.-qty. cm3/

difference 1000s.: -28.0...-34.0 #

F02

Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
TD-travel dif.measurement	+
correttore anticipo iniezione (SV)	+ Overlow quantity at overflow valve:
1.Speed 1/min: 1500	+
Charge press hPa: 1000	1st speed 1/min: 700
TD-travel	+ Charge press. hPa: 1000
difference mm: -0.50.7 #	+ Shutoff
Shutoff	+ electromagnet Volt: 12
electromagnet Volt: 12	+ Overflow : 41.7083.40
	+ quantity cm3/10s: (26.7098.40)
Inspection-pump test specifications	+ 2nd speed 1/min: 2100
Test specifications in parentheses	+ Charge press. hPa: 1000
The special series of the seri	+ Shutoff
Timing-device characteristic:	electromagnet Volt: 12
Thirting device character (3016)	Overflow : 55.60139.00
2nd speed 1/min: 1500	T 0/er (tow : 33.00137.00137.00137.00137.00
Charge press hPa: 1000	quantity cm3/10s: (40.60154.00)
TD travel mm: 3.404.20	T Deldigant minute and baselin at about
	† Delivery-quarit. and breakaway char.:
mm: (3.104.50)	†
Shutoff	T 4 4 4 700
electromagnet Volt: 12	1nd speed 1/min: 700
3rd speed 1/min: 1000	+ Charge-air pressure-setting
Charge press hPa: 1000	point hPa: 350
TD travel mm: 1.401.80	+ LDA-stroke mm: 7.1
mm: (0.902.30)	+ Shutoff
Shutoff	+ electromagnet Volt: 12
electromagnet Volt: 12	+ Del. quantity cm3/: 55.5056.50
4th speed 1/min: 700	+ 1000s.: (53.5058.50)
Charge press hPa: 1000	+ 3rd speed 1/min: 2550
TD travel mm: 0.201.00	+ Charge press. hPa: 1000
mm: (0.001.30)	+ Shutoff
Shutoff	+ electromagnet Volt: 12
electromagnet Volt: 12	Del. quantity cm3/: 0.008.00
5th speed 1/min: 2100	+ 1000s.: (0.008.00)
Charge press. hPa: 1000	+ 5th speed 1/min: 2300
TD travel mm: 6.106.90	Charge press. hPa: 1000
mm: (5.807.20)	+ Shutoff
Shutoff	electromagnet Volt: 12
electromagnet Volt: 12	Del quantity emile 40 00 46 00
cecerange et vote. 12	Del. quantity cm3/: 40.0046.00 1000s.: (39.0047.00)
Supply-pump pressure characteristic:	
supply pump pressure character istit.	9th speed 1/min: 2100
1st speed 1/min: 2100	+ Charge press. hPa: 1000
	+ Shutoff
Charge press. hPa: 1000	+ electromagnet Volt: 12
Supply-pump	+ Del. quantity cm3/: 63.0066.00
pressure bar: 7.207.80	1000s.: (61.5067.50)
Shutoff	+ 12th speed 1/min: 1500
electromagnet Volt: 12	† Charge press. hPa: 1000
2nd speed 1/min: 1000	+ Shutoff
Charge press. hPa: 1000	+ electromagnet Volt: 12
Supply-pump	+ Del. quyntity cm3/: 65.5066.50
pressure bar: 4.204.80	+ 1000s.: (64.0068.00)
Shutoff	+ 18th speed 1/min: 700
electromagnet Volt: 12	Charge press. hPa: -
3rd speed 1/min: 700	Shutoff
Charge press. hPa: 1000	electromagnet Volt: 12
Supply-pump .	Del. quantity cm3/: 43.0044.00
pressure bar: 3.203.80	1000s.: (41.0046.00)
	20th speed 1/min: 700
	•

Charge press. hPa: 1000 Supply pump-Shutoff pressure : -0.1...-0.3 " electromagnet Volt: 12 Del. quantity cm3/: 65.50...68.50 difference bar: -1000s.: (64.00...70.00) Part-load del.at 3rd inj.-gty. terza fermo della portata stop (EGR set) scarico) (ARF) Delivery-quant. and breakaway char .: gaz d'échappement-ARF) Inj.-qty.values, temp.-compensated mm: 12.0 Spacing temperatura 1st speed 1/min: 1000 tel. quantity am3/: 0.00...8.00 Charge press. hPa: 1000 1000s.: (0.00...8.00) Shutoff electromagnet Volt: 12 Mech. shutoff: Del. quantity cm3/: 43.00...44.00 1000s.: (41.00...46.00) Electr. shutoff: Automatic starting fuel delivery: 1st speed 1/min: 450 Del. quantity cm3/: 0.00...3.00 1/min: 400 1st speed 1000s.: (0.00...3.00) Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 45.00...75.00 electromagnet volt: -1000s.: (45.00...75.00) Idle delivery: 1/min: 550 2nd speed 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 25.00...45.00 1000s.: (25.00...45.00) Shutoff 4th speed 1/min: 100 1000s.: (3.0) Shutoff 2nd speed 1/min: 600 electromagnet Volt: 12 Del. quantity cm3/: 45.00...75.00 1000s.: (45.00...75.00) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...5.00 1000s.: (0.00...5.00) 3rd speed 1/min: 500 Shutoff electromagnet: Shutoff Cut-in electromagnet Volt: 12 Del. quantity cm3/: 2.50...7.50 1000s.: (2.00...8.00) min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Load-dependent start of delivery: Inj.-qty.dif.measurement: Designation mm: 3.2...3.4 mm: 5.2...5.6 K KF MS mm: 0.6...1.0 LDA stroke mm: 7.1 difference 1000s.: mm: 38.8...40.8 Shutoff mm: 37.2...46.8 electromagnet Volt: 12 Ajustement Potentiometer: SP press.-dif.measurement: pompa di mandata (FP): Supply voltage 1st speed 1/min: 1500 pot. volt: 5.0 Output volt

pot.

volt: 2.31

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor—head end

Note inst. in remarks column

Test scheet : VMA Edition : 02.94 replaces : 02.08.93 Calibrating oil : ISO-4113

Injection pump : VE4/10F2100L414-1 Type number : 0 460 404 073

Customer Part-No. :

Customer-specific information

Customer

Engine : HR 425 CLIRS

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil *C return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Opening

bar: 130.00...133.00 Pressure

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000 Charge press. hPa: 1000 Setting value mm: 1.20...1.60

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1000 Speed Charge press hPa: 1000

Setting value bar: 4.70...5.30

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1500 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 65.00...66.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 3.0 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 700

Del. quantity cm3/

1000s.: 43.00...44.00

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 450

Del. quantity cm3/

1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.0 1000s.: (3.0)

Full-load speed regulation

1/min: 2300 Speed Charge press hPa: 1000

Del. quantity cm3/ 1000s.: 40.00...46.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 45.00...75.00 mind 1000s.: 45.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1500 Charge press hPa: -Inj.-qty. cm3/

difference 1000s.: -13.0...-19.0 #

F06

Shutoff	+	Shute	off	
electromagnet Volt:		elec	tromagnet Volt:	12
TD-travel dif.measu	rement			41.7083.40
correttore anticipo	iniezione (SV)	- guan	tity cm3/10s:	(26.7098.40)
1.Speed 1/min:	1500		speed 1/min:	
Charge press hPa:			ge press. hPa:	
TD-travel	4	Shut		
	-1.41.6 #		tromagnet Volt:	12
Shutoff		Over	flow :	55 60 139 00
electromagnet Volt:	12	· dilan	tity cm3/10s:	(40.60154.00)
	1.2	. quar	crey (mor 103:	(40.00)4.00
Inspection-pump tes	t specifications 🕹	Deli	very-quant, and	breakaway char.:
Test specifications	in parentheses		, 400	, , , , , , , , , , , , , , , , , , , ,
	<u> </u>	•		
Timing device charac	cteristic:	1nd :	speed 1/min:	700
	, 1	Char	ge-air pressure-	-setting
2nd speed 1/min:	2100	poin	t hPa:	350
Charge press hPa:	1000		stroke mm:	7.0
TD travel mm:	7.308.10	Shute		
mm:	(7.008.40)		tromagnet Volt:	12
Shutoff	1	Del	quantity cm3/:	54.0055.00
electromagnet Volt:	12			(52.0057.00)
3rd speed 1/min:		3rd 9	speed 1/min:	
Charge press hPa:			ge press. hPa:	
TD travel mm:		Shute		,000
	(0.702.10)		tromagnet Volt:	12
Shutoff	1		quantity cm3/:	
electromagnet Volt:	12 I	Det.		(0.008.00)
6th speed 1/min:		5+h	speed 1/min:	2300
Charge press. hPa:		Chan	speed 1/mm.	1000
	4.004.80	Shute	ge press. hPa:	1000
	(3.705.10)			12
Shutoff	(3.703.10)	erec	tromagnet Volt:	10 00 14 00
	12	bet.	quantity cm3/:	
electromagnet Volt:	12	046		(39.0047.00)
Committee on the committee of the commit			speed 1/min:	
Supply-pump pressure	cnaracteristic:		ge press. hPa:	1000
Antonomical Atolon	2400	Shute		40
1st speed 1/min:		elect	tromagnet Volt:	12
Charge press. hPa:	1000 +	Del.	quantity cm3/:	67.5064.50
Suppliy-pump	†			(60.0066.00)
	7.608.20		speed 1/min:	
Shutoff	+		ge press. hPa:	1000
electromagnet Volt:		Shute		
2nd speed 1/min:			tromagnet Volt:	
Charge press. hPa:	1000 +	Del.	quyntity cm3/:	65.0066.00
Supply-pump	+			(63.5067.50)
	4.705.30	18th	speed 1/min:	700
Shutoff	+	Char	ge press. hPa:	- .
electromagnet Volt:		Shute		
3rd speed 1/min:	700	elect	tromagnet Volt:	12
Charge press. hPa:	1000		quantity cm3/:	
Supply-pump	+			(41.0046.00)
	3.804.40	20th	speed 1/min:	
Shutoff	1		ge press. hPa:	
electromagnet Volt:	12	Shute		
	1		tromagnet Volt:	12
Overlow quantity at	overflow valve: 1		quantity cm3/:	
TITE TOTAL MAINTENEY OF	1	JC (.		(63.5069.50)
1st speed 1/min:	700 I		,000.	.00.7007.707
Charge press. hPa:		Moch	shutoff:	

F07

Del. quantity cm3/: 43.00...44.00 10003.: (41.00...46.00) Electr. shutoff: 1/min: 450 1st speed Automatic starting fuel delivery: Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 1st speed 1/min: 400 Shutoff Shutoff electromagnet volt: electromagnet Volt: 12 Del. quantity cm3/: 45.00...75.00 1000s.: (45.00...75.00) Idle delivery: 1st speed 1/min: 450 2nd speed 1/min: 550 Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12 Del. quantity cm3/: 13.00...17.00 1000s.: (10.00...20.00) Del. quantity cm3/: 25.00...45.00 1000s.: (25.00...45.00) Dispersion cm3/: 3.0 1000s.: (3.0) 1/min: 100 4th speed 1/min: 600 2nd speed Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 45.00...75.00 electromagnet Volt: 12 Del. quantity cm3/: 0.00...5.00 1000s.: (45.00...75.00) 1000s : (0.00...5.00) 1/min: 500 3rd speed Shutoff electromagnet: Shutoff electromagnet Volt: 12 Cut-in Del. quantity cm3/: 1.50...6.50 1000s.: (1.00...7.00) min voltage : 10.0 Rated voltage : 12.0 Load-dependent start of delivery: Mounting and assembly dimensions: Inj.-qty.dif.measurement: Designation 1st speed 1/min: 1500 mm: 3.2...3.4 Charge press. hPa: Inj.-qty. cm3/ : -7.0...-9.0 " KF mm: 5.2...5.6 mm: 0.6...1.0 MS difference 1000s.: -SVS max. mm: 4.3 mm: 7.0 mm: 38.8...40.8 mm: 36.2...45.8 Shutoff LDA stroke electromagnet Volt: 12 Ya Yb SP press.—dif.measurement: pompa di mandata (FP): Ajustement Potentiometer: 1st speed 1/mir: 1500 Charge press. hPa: -Supply voltage Supply pumpvolt: 5.0 pot. : -0.1...-0.3 " pressure Output volt difference bar: volt: 2.31 pot. Shutoff electromagnet Volt: 12 Remarks: Part-load del.at 3rd inj.-qty. terza fermo della portata Operate control lever after each stop (EGR set) manifold-pressure compensator pressure scarico) (ARF) change. gaz d'échappement-ARF) mm: 12.0 Ya = Distance between VE flange and speed-control lever in idle Spacing 1st speed 1/min: 1000 position Measurement point = edge of control Charge press. hPa: 1000 Shutoff Lever on drive end electromagnet Volt: 12

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : SOF Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/10F2050R589 Type number : 0 460 404 081

Customer Part-No. :

Customer-specific information Customer : IVECO-SOFIM

Engine : 8140.67

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp. •0

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Opening

bar: 130.00...133.00 Pressure

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery

Prestroke mm: 0.2

(from BDC): +-0.02(0.04)

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1200

Setting value mm: 2.00...2.20

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1200 Speed

Setting value bar: 5.80...6.40

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1200

Del. quantity cm3/

1000s.: 41.50...42.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2,5 1000s.: (2,5)

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

1000s.: 12.0...16.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2.5)

Full-load speed regulation

1/min: 2300 Speed

Del. quantity cm3/

1000s.: 31.00...35.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 70.00...110.00

mind 1000s.: 70.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1200 Speed

Inj.-qty. cm3/

difference 1000s.: -15.0...-21.0 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1. Speed 1/min: 1200

TD-travel

difference mm: -0.7...-0.9 #

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device chara	cteristic:	Del. quantity cm3/:	
1st speed 1/min:	1200	2nd speed 1/min:	(40.0044.00)
	2.002.20	Shutoff	2000
	(1.502.70)		12
		electromagnet Volt:	
electromagnet Volt:		Del. quantity cm3/:	
2nd speed 1/min:		1000s.:	
	4.405.00	3rd speed 1/min:	2400
mm:	(4.005.40)	Shutoff	
Shutoff	 	electromagnet Volt:	12
electromagnet Volt:	12	Del. quantity cm3/:	
3rd speed 1/min:		1000s.:	-
	5.606.20	4th speed 1/min:	
	(5.206.60)	Shutoff	2300
Shutoff	(3.200.00)		10
	12	electromagnet Volt:	
electromagnet Volt:		Del. quantity cm3/:	
4th speed 1/min:			(27.0039.00)
	7.007.80	5th speed 1/min:	2100
	(6.708.10)	Shutoff	
Shutoff	+	electromagnet Volt:	12
electromagnet Volt:	12 🗼	Del. quantity cm3/:	38,50,41,50
3	1	1000s	(37.5042.50)
Supply-pump pressur	e characteristic:	6th speed 1/min:	1500
copiety pant pressur	T	Del. quantity cm3/:	
1st speed 1/min:	(m) T		
	δυ †		(39.0044.00)
Supply-pump	7 20 1 50	7th speed 1/min:	
	3.904.50	Del. quantity cm3/:	35.5039.50
Shutoff	+	1000\$.:	(34.5040.50)
electromagnet Volt:	12 +		
2nd speed 1/min:	1200	Mech. shutoff:	
Supply-pump	- ↓		
	5.806.40	Electr. shutoff:	
Shutoff	1	ecceri siacorri	
electromagnet Volt:	12	ist speed 1/min:	775
3rd speed 1/min:			
	7	Del. quantity cm3/:	
Supply-pump	0.70 0.00		(0.003.00)
	8.308.90	Shutoff	
Shutoff	+	electromagnet volt:	-
electromagnet Volt:	12 +		
	+	Idle delivery:	
Overlow quantity at	overflow valve:		
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		1st speed 1/min:	375
1st speed 1/min:	600	Shutoff	
Shutoff	T I		10
	12 T	electromagnet Volt:	
electromagnet Volt:	/4 70 67 /0	Del. quantity cm3/:	12.0015.00
	41.7083.40		(9.0019.00)
quantity cm3/10s:		Dispersion cm3/:	
2nd speed 1/min:	2100 +	1000s.:	
Shutoff	+	2nd speed 1/min:	465
electromagnet Volt:	12 +	Shutoff	
	55.60137.90	electromagnet Volt:	12
quantity cm3/10s:		Del. quantity cm3/:	
720.1070/ 000/ 1031	T		(0.003.00)
Dalivammusat and	hreakauay share .	10005.:	(0.003.00)
Delivery—quant. and	Di Canaway Cliati	I would also are desired.	n - & -1-1 *
	†	Load-dependent start	
4	1200	Injqty.dif.measure	ement:
1nd speed 1/min:	1200 +		
Shutoff	+	1st speed 1/min:	
electromagnet Volt:	12 +	Inj.—qty. cm3/ :	
•	1	difference 1000s.:	-

Shutoff electromagnet Volt: 12 2nd speed 1/min: 1200 Inj.-qty. cm3/: 0.0...+3.0 'Z difference 1000s.: -Shutoff electromagnet Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): difference mm: -Shutoff electromagnet Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1/min: 1200 1st speed Supply pump-: -0.1...-0.3 " pressure difference bar: -Part-load del.at 3rd inj.-qty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échaopement-ARF) Spacing mm: 12.0 1st speed 1/min: 1200 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 19.5...20.5 1000S.: (17.5...22.5) Automatic starting fuel delivery: 1/min: 500 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 25.00...45.00 1000s.: -2nd speed 1/min: 300 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 55.00...85.00 1000s.: -3rd speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00...110.00 1000s.: -Shutoff electromagnet: Cut-in

Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm. --KF mm: 5.6...6.0 MS mm: 1.7...1.9 mm: 42.8...44.8

Remarks:

Ya

Yb

Ya = Distance between VE flange and speed-control lever in idle Measurement point = edge of control Lever on drive end

mm: 62.4...70.8

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Pump with slave plunger

Z = Absolute delivery

min voltage : 10.0

Note inst. in remarks column

Test scheet : SOF Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/10F2050R591 Type number : 0 460 404 982

Customer Part-No.:

Customer-specific information Customer : IVECO-SOFIM

Engine : 8140.67

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp. •c

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Openina |

bar: 130.00...133.00 Pressure

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length

Start of delivery

Prestroke mm: 0.2

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1200

Setting value mm: 2.10...2.30

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1200

Setting value bar: 6.00...6.60

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1200 Speed

Del. quantity cm3/ 1000s.: 42.00...43.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2,5 1000s.: (2,5)

Low-idle speed regulation

1/min: 375

Del. quantity cm3/

1000s.: 12.0...16.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2.5)

Full-load speed regulation

1/min: 2300 Speed

Del. quantity cm3/

1000s.: 23.00...27.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 70.00...110.00

1000s.: 70.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1200 Speed

Inj.-qty. cm3/

difference 1000s.: -15.0...-21.0 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1.Speed 1/min: 1200

TD-travel

difference mm: -0.7...-0.9 #

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Del. quantity cm3/: 42.00...43.00 1000s.: (40.50...44.50) Timing-device characteristic: 1/min: 1200 mm: 2.10...2.30 mm: (1.60...2.80) 1st speed 1/min: 2600 2nd speed TD travel Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: electromagnet Volt: 12 2rid speed 1/min: 1600 mm: 4.50...5.10 mm: (4.10...5.50) TD travel 1/min: 2400 3rd speed Shutoff electromagnet Volt: 12
Del. quantity cm3/: 3.00...13.00
10005.: -Shutoff 1/min: 2300 4th speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 23.00...27.00 1000s.: (19.00...31.00) Shutoff electromagnet Volt: 12 1/min: 2100 4th speed TD travel mm: 7.00...7.80 5th speed 1/min: 2100 mm: (6.70...8.10) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 39.00...42.00 1000s.: (38.00...43.00) Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: 1/min: 1500 6th speed Del. quantity cm3/: 40.50...43.50 1000s.: (39.50...44.50) 1/min: 600 1st speed Supply-pump 1/min: 600 7th speed Del. quantity cm3/: 35.50...39.50 1900s.: (34.50...40.50) bar: 4.10...4.70 pressure Shutoff electromagnet Volt: 12 2nd speed 1/min: 1200 Mech. shutoff: Supply-pump pressure bar: 6.00...6.60 Electr. shutoff: Shutoff electromagnet Volt: 12 3rd speed 1/min: 2100 1st speed 1/min: 375 3rd speed Del. quantity cm3/: 0.00...3.00 Supply-pump 1000\$: (0.00...3.00) bar: 8.50...9.10 pressure Shutoff Shutoff electromagnet volt: electromagnet Volt: 12 Idle delivery: Overlow quantity at overflow valve: 1st speed 1/min: 375 1/min: 600 1st speed Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 12.00...16.00 1000s.: (9.00...19.00) Dispersion cm3/: 2.5 electromagnet Volt: 12 Overflow : 41.70...83.40 cm3/10s: (27.80...97.30) 1/min: 2100 quantity 2nd speed 1000S.: (2.5) 1/min: 465 Shutoff 2nd speed electromagnet Volt: 12 Shutoff : 55.60...137.90 Overflow electromagnet Volt: 12 cm3/10s: (41.70...152.90) Del. quantity cm3/: 0.00...3.00 quantity 1000s.: (0.00...3.00) Delivery-quant. and breakaway char.: Load-dependent start of delivery: Inj.-qty.dif.measurement: 1nd speed 1/min: 1200 Shutoff 1st speed 1/min: 1200 electromagnet Volt: 12 Inj.-qty. cm3/ : -13.0..-15.0" difference 1000S.: -

Shutoff electromagnet Volt: 12 2nd speed 1/min: 1200 Inj.-qty. cm3/: 0.0...+3.0 'Z difference 1000s.: -Shutoff electromagnet Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1200 TD-travel : -0.7...-0.9 ' difference mn: -Shutoff electromagnet Volt: 12 SP press.—dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1200 Supply pumppressure : -0.1...-0.3 " difference bar: -Part-load del.at 3rd inj.-gty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0 1st speed 1/min: 1200 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 29.5...33.5 1000s.: (29.0...34.0) Automatic starting fuel delivery: 1st speed 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 25.00...45.00 1000s.: -2nd speed 1/min: 300 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 55.00...85.00 1000s.: -3rd speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00...110.00 1000s.: -Shutoff electromagnet: Cut-in

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

KF mm: KF mm: 5.6...6.0

MS rem: 1.6...2.0

Ya nm: 42.9...44.9

Yb mm: 31.7...39.7

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Pump with slave plunger

Z = Absolute delivery

min voltage

: 10.0

Note inst. in remarks column

Test scheet : VWW Edition : 02.94 : 19.12.86 replaces Calibrating oil : ISO-4113

: VE6/10F2400L116-5 Injection pump Type number : 0 460 406 036

Customer Part-No.:

Customer-specific information

Customer

: 087 T Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil •c return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening

Pressure bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery mm: -Prestroke (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500 Charge press. hPa: 750

Setting value mm: 1.50...1.90

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1500 Charge press hPa: 750 Setting value bar: 5.70...6.30

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1250 Charge press. hPa: 750

Del. quantity cm3/

1000s.: 42.60...43.60

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 600

Del. quantity cm3/ 1000s.: 26.70...27.70

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

1/min: 415 Speed

Del. quantity cm3/

1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s. (3.0)

Full-load speed regulation

1/min: 2675 Speed Charge press hPa: 750 Del. quantity cm3/

1000s.: 11.00...15.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 40.00...70.00 mind 1000s.: 40.00

Shutoff

electromagnet Volt: 12

Inspection—pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 1200 2nd speed Charge press hPa: 750

TD travel mm:	0.301.10 +	Shutoff
	(0.001.40)	electromagnet Volt: 12
Shutoff	+	Del. quantity cm3/: 33.5034.50
electromagnet Volt:		1000s.: (31.0037.0
3rd speed 1/min:		2nd speed 1/min: 2850
Charge press hPa:	750 +	Charge press. hPa: 750
TD travel mm:		Shutoff
	(1.002.40)	electromagnet Volt: 12
Shutoff	+	Del. quantity cm3/: 0.003.00
electromagnet Volt:	12 +	1000s.: (0.003.00)
4th speed 1/min:	2400	3rd speed 1/min: 2675
Charge press hPa:	750	Charge press. hPa: 750
TD travel. mm:		Shutoff
mn:	(3.404.80)	electromagnet Volt: 12
Shutoff	1	Del. quantity cm3/: 11.0015.00
electromagnet Volt:	12	1000s.: (9.0017.00
	• 1	4th speed 1/min: 2575
Supply-pump pressur	e characteristic:	Charge press. hPa: 750
cather, bank bicood.		Shutoff
1st speed 1/min:	km I	electromagnet Volt: 12
Charge press. hPa:		Del. quantity cm3/: 18.0028.00
Supply-pump	I	1000s.: (17.0029.0
	3.303.90 I	
Shutoff	J.305.70	
electromagnet Volt:	12	Charge press. hPa: 750
2nd speed 1/min:		Shutoff
		electromagnet Volt: 12
Charge press. hPa:	750	Del. quantity cm3/: 36.3038.30 1000s.: (35.1039.56
Supply-pump	F 70 / 70	10005.: (35.1039.5)
	5.706.30	6th speed 1/min: 1500
Shutoff	12	Charge press. hPa: 750
electromagnet Volt:		Shutoff
3rd speed 1/min:		electromagnet Volt: 12
Charge press. hPa:	/50 +	Del. quantity cm3/: 42.6043.60
Supply-pump .	+	1000\$.: (40.9045.3)
	8.068.60	7th speed 1/min: 600
Shutoff	+	Charge press. hPa: 750
electromagnet Volt:	12	Shutoff
	+	electromagnet Volt: 12
Overlow quantity at	overflow valve: +	Del. quantity cm3/: 35.5038.50
	+	1000s.: (34.0040.0)
1st speed 1/min:		8th speed 1/min: 600
Charge press. hPa:	- +	Charge press. hPa: -
Shutoff	+	Shutoff
electromagnet Volt:		electromagnet Volt: 12
Overflow:	41.7083.40	Del. quantity cm3/: 26.7027.70
quantity cm3/10s:	(27.8097.30)	1000s.: (24.2030.20
2nd speed 1/min:	2400 +	
Charge press. hPa:	750 +	Mech. shutoff:
Shutoff	+	
electromagnet Volt:	12	Electr. shutoff:
	55.60138.90	
quantity cm3/10s:		1st speed 1/min: 415
,		Del. quantity cm3/: 0.003.00
Delivery-quant. and	breakaway char.:	10008.: (0.003.00)
- /		Shutoff
	1	electromagnet volt: -
1nd speed 1/min:	800	Trees with gride TO to t
Charge-air pressure		Idle delivery:
point hPa:	300 I	2000 000110171
LDA-stroke mm:		1st speed 1/min: 415
	Τ	ise specu i/miii. 415

Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.00...9.00 1000s.: (4.00...12.00) cm3/: 2.0 Dispersion 1000s.: (3.0) 1/min: 750 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 430 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.00...30.00 1000s.: -2nd speed 1/min: 230 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.00...70.00 1000s,: -4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.00...70.00 1000s.: -Shutoff electromagnet: Cut-in min voltage : 10.0

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4 KF mm: 6.3...6.7 MS mm: 1.7...1.9 SVS max. mm: 2.8 LDA stroke mm: 4.8 mm: 8.5...10.5 mm: 71.0...89.6 Ya Yb

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and

speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Operate control lever after each manifold-pressure compensator pressure change.

Note inst. in remarks column

Test scheet : ONA Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/10F1500R209-6 Type number : 0 460 406 066

Customer Part-No. :

Customer-specific information

Customer : ONAN

Engine : L 634 TA

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery

Prestroke mm: 0.2

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1400 Speed Charge press. hPa: 800

Setting value mm: 1.40...2.20

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1400 Speed Charge press hPa: 800

Setting value bar: 4.80...5.40

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1400 Speed Charge press. hPa: 800

Del. quantity cm3/

1000s.: 55.50...56.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0)

Full-load del. w/out charge press.:

1/min: 700

Del. quantity cm3/

1000s.: 42.50...43.50

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

1/min: 400 Speed

Del. quantity cm3/ 1000s.: 14.00...18.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 1640 Charge press hPa: 800

Del. quantity cm3/

1000s.: 20.00...24.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 42.00...92.00

mind 1000s.: 42.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1100 Speed Charge press hPa: 800

Inj.-qty. cm3/

difference 1000s.: -8.50...-16.5 #

Shutoff	+	Shutoff	
electromagnet Volt:	12	electromagnet Volt:	12
TD-travel dif.measu		Overflow :	41.7083.40
correttore anticipo		quantity cm3/10s:	(27.8097.30)
1.Speed 1/min:	1100 +	2nd speed 1/min:	1500
Charge press hPa:	800 +	Charge press. hPa:	800
TD-travel	+	Shutoff	
difference mm:	-0.50.7 #	electromagnet Volt:	12
Shutoff	1		55.60138.90
electromagnet Volt:	12	quantity cm3/10s:	(41 70 153 90)
3,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1	444.16.169	(4)11101111991707
Inspection-pump tes	t specifications 1	Delivery-quant. and	hroakauay chan .
Test specifications	in narentheses	section quarter and	Di Canaway Chai
reac operations	1. par erreneses		
Timing-device chara	cteristic:	1nd speed 1/min:	700
Timing device chara	I		
2nd speed 1/min:	1600 · T	Charge-air pressure point hPa:	750
Charge press hPa:		Shutoff	390
	4.304.70		42
		electromagnet Volt:	12
	(3.805.20)	Del. quantity cm3/:	48.0049.00
Shutoff	.		(46.3050.80)
electromagnet Volt:		2nd speed 1/min:	
3rd speed 1/min:		Charge press. hPa:	800
Charge press hPa:		Shutoff	
TD travel mm:		electromagnet Volt:	12
	(2.703.70)	Del. quantity cm3/:	0.006.00
Shutoff	+	1000s.:	(0.006.00)
electromagnet Volt:	12 +	3rd speed 1/min:	
4th speed 1/min:		Charge press. hPa:	
Charge press hPa:		Shutoff	
	1.402.20	electromagnet Volt:	12
	(1.102.50)	Del. quantity cm3/:	
Shutoff	1		(18.0026.00)
electromagnet Volt:	12 I	4th speed 1/min:	
ctcttromagnet vott.	T I	Charge press. hPa:	
Supply-pump pressure	a characteristic. T		000
anthry haub bilesson	e characteristic:	Shutoff	10
1st seems 1/stu.	700	electromagnet Volt:	
1st speed 1/min:		Del. quantity cm3/:	
Charge press. hPa:	800 +	10005.:	
Supply-pump	+	5th speed 1/min:	
	2.302.90	Charge press. hPa:	800
Shutoff	+	Shutoff	
electromagnet Volt:		<pre>electromagnet Volt:</pre>	12
2nd speed 1/min;		Del. quantity cm3/:	52.5055.50
Charge press. hPa:	800 +	1000s.:	(51.7056.30)
Supply-pump	+	6th speed 1/min:	1400
pressure bar:	3.804.40	Charge press. hPa:	800
Shutoff	+	Shutoff	
electromagnet Volt:	12	electromagnet Volt:	12
3rd speed 1/min:		Del. quantity cm3/:	
Charge press. hPa:			(53.7058.30)
Supply-pump		7th speed 1/min:	700
	4.705.40	Charge press. hPa:	
Shutoff	T	Shutoff	
electromagnet Volt:	12		10
ctectionagizet vott:	' ¹	electromagnet Volt:	
Overland aumentation at	avantles values	Del. quantity cm3/:	
Overlow quantity at	Overstow valve:	iuuus.:	(40.7045.30)
1ct consid 1/min.	700	Manh alexande	
1st speed 1/min:		Mech. shutoff:	
Charge press. hPa:	ou +	Mech. Abstellung:	

1st speed 1/min: 1500 Charge press. hPa: 800 Del. quantity cm3/: 0.00...3.00 1000S.: (0.00...3.00) Shutoff electromagnet volt: 12 Electr. shutoff: 1/min: 350 1st speed Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1/min: 400 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 14.00...18.00 1000S.: (12.00...20.00) cm3/: 2.0 Dispersion 1000s.: (3.0) 1/min: 450 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...6.00 1000S.: (0.00...6.00) Load-dependent start of delivery: Inj. - cty.dif.measurement: 1st speed 1/min: 1100 Charge press. hPa: 800 Inj.-qty.cm3/: -5.0...-7.0 " difference 1000s.: -Shutoff electromagnet Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1/min: 1100 1st speed Charge press. hPa: 800 Supply pump-: -0.1...-0.3 " pressure difference bar: -Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1st speed 1/min: 300 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 18.00...42.00 1000s.: -

1/min: 220 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 42.00...92.00 1000s.: -4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 42.00...92.00 1000s.: -Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: -KF mm: 5.8...6.2 MS mm: 0.8...1.2 SVS max. mm: 1.9 LDA stroke mm: mm: 30.8...34.8 Ya Yb mm: 64.2...78.8 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end Operate control lever after each manifold-pressure compensator pressure change.

Note inst. in remarks column

Test scheet : VWW : 02.94 Edition : 07.93 replaces Calibrating oil : ISO-4113

Injection pump : VE6/10F2150L398 Type number : 0 460 406 075

(ustomer Part-No. :

Customer-specific information

Customer

Engine : 2.4L SD

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening

Pressure bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500

Setting value mm: 4.40...4.80

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1500 Speed

Setting value bar: 6.00...6.30

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250

Del. quantity cm3/ 1000s.: 29.50...30.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0)

Low-idle speed regulation

1/min: 375

Del. quantity cm3/ 1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2325

Del. quantity cm3/ 1000s.: 10.00...14.00

electromagnet Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 35.00...65.00

1000s.: 35.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1500

Inj.-qty. cm3/

difference 1000s.: -8.00..-12.00#

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV) 1.Speed 1/min: 1500

TD-travel

difference mm: -0.60..-0.80#

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing device characteristic:	+ Del. quantity cm3/: 10.0014.00 + 1600S.: (8.0016.00)
2nd speed 1/min: 1700	8th speed 1/min: 2275
TD travel mm: 5.105.90	Shutoff
mm: (4.806.20)	
Shutoff	electromagnet Volt: 12
	Del. quantity cm3/: 14.5024.50
electromagnet Volt: 12	1000s.: (13.5025.50
3rd speed 1/min: 1500	+ 9th speed 1/min: 2150
TD travel mm: 4.404.80	+ Shutoff
mm: (3.905.30)	+ electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 21.5023.50
electromagnet Volt: 12	1000s.: (20.3024.70)
4th speed 1/min: 1000	+ 10th speed 1/min: 1850
TD travel mm: 1.802.60	Shutoff
mm: (1.502.90)	+ electromagnet Volt: 12
Shutoff	+ Del. quantity cm3/: 23.2025.80
electromagnet Volt: 12	1000c . (24.50 . 27.50)
etecti dilagnet vott. 12	10005.: (21.5027.50
Complete management of a second section	12th speed 1/mir: 1250
Supply-pump pressure characteristic:	+ Shutoff
4	+ electromagnet Volt: 12
1st speed 1/min: 750	+ Del. quyntity cm3/: 29.5030.50
Supply-pump	+ 1000S.: (27.8032.20)
pressure bar: 3.804.40	+ 20th speed 1/min: 750
Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
2nd speed 1/min: 1500	+ Del. quantity cm3/: 26.0029.00
Supply-pump	10005.: (24.5030.50)
pressure bar: 6.006.60	10005 (24.5050.50.
Shutoff	Hech. shutoff:
	Thech. Shutott:
electromagnet Volt: 12	The state of the s
3rd speed 1/min: 2150	+ Electr. shutoff:
Supply-pump	†
pressure bar: 7.908.50	+ 1st speed 1/min: 375
Shutoff	+ Del. quantity cm3/: 0.003.00
	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)
Shutoff	+ Del. quantity cm3/: 0.003.00
Shutoff electromagnet Volt: 12	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff
Shutoff	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve:	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: -
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery:
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (27.8097.30)	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (27.8097.30) 2nd speed 1/min: 2150	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00)
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow	Del. quantity cm3/: 0.003.00 1000S.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000S.: (4.0012.00) Dispersion cm3/: 2.0
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow	Del. quantity cm3/: 0.003.00 1000S.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000S.: (4.0012.00) Dispersion cm3/: 2.0 1000S.: (3.0)
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow	Del. quantity cm3/: 0.003.00 1000S.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000S.: (4.0012.00) Dispersion cm3/: 2.0
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0)
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (27.8097.30) 2nd speed 1/min: 2150 Shutoff electromagnet Volt: 12 Overflow : 55.60138.90 quantity cm3/10s: (41.70153.90) Delivery-quant. and breakaway char.:	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (27.8097.30) 2nd speed 1/min: 2150 Shutoff electromagnet Volt: 12 Overflow : 55.60138.90 quantity cm3/10s: (41.70153.90) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2500	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (27.8097.30) 2nd speed 1/min: 2150 Shutoff electromagnet Volt: 12 Overflow : 55.60138.90 quantity cm3/10s: (41.70153.90) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2500 Shutoff	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Load-dependent start of delivery:
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (27.8097.30) 2nd speed 1/min: 2150 Shutoff electromagnet Volt: 12 Overflow : 55.60138.90 quantity cm3/10s: (41.70153.90) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2500 Shutoff electromagnet Volt: 12	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (27.8097.30) 2nd speed 1/min: 2150 Shutoff electromagnet Volt: 12 Overflow : 55.60138.90 quantity cm3/10s: (41.70153.90) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Load-dependent start of delivery: Injqty.dif.measurement:
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (27.8097.30) 2nd speed 1/min: 2150 Shutoff electromagnet Volt: 12 Overflow : 55.60138.90 quantity cm3/10s: (41.70153.90) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000S:: (0.003.00)	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1500
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (27.8097.30) 2nd speed 1/min: 2150 Shutoff electromagnet Volt: 12 Overflow : 55.60138.90 quantity cm3/10s: (41.70153.90) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s: (0.003.00) 5th speed 1/min: 2325	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1500 Injqty. cm3/: -6.58.5
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (27.8097.30) 2nd speed 1/min: 2150 Shutoff electromagnet Volt: 12 Overflow : 55.60138.90 quantity cm3/10s: (41.70153.90) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000S:: (0.003.00)	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00) Dispersion cm3/: 2.0 1000s.: (3.0) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1500

Shutoff

electromagnet Volt: 12

1/min: 1500 2nd speed

cm3/: 0.0...3.0 Z " Inj. aty.

difference 1000S .: -

TD-travel dif.measurement:

correttore anticipo iniezione (SV): 1st speed 1/min: 1500

: -1.1...-1.5 " TD-travel

difference mm: -

Shutoff

electromagnet Volt: 12

SP press.-dif.measurement:

pompa di mandata (FP):

1st speed 1/min: 1500

Supply pump-

: -0.1...-0.3 ' pressure

difference bar: -

Shutoff

electromagnet Volt: 12

Automatic starting fuel delivery:

1st speed 1/min: 300

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 35.00...75.00 1000s.: (35.00...75.00)

1/min: 500 2nd speed

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 15.00...35.00

1000s.: (15.00...35.00)

1/min: 100 4th speed

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 35.00...65.00

1000s.: (35.00...65.00)

Shutoff electromagnet:

Cut-in

min voltage : 10.0

: 12.0 Rated voltage

Mounting and assembly dimensions:

Designation

mm: 3.2...3.4 K KF

mm: 6.3...6.7

MS mm: 1.3...1.7

mm: 31.5...33.5 Ya

mm: 51.2...63.4 Yb

Remarks:

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Note inst. in remarks column

Test scheet : FIA Edition : 2.94 : 04.06.92 replaces Calibrating oil : ISO-4113

Injection pump : VE3/11F1250L163-1 Type number : 0 460 413 002

Customer Part-No. :

Customer-specific information Customer : IVECO-FIAT

: 8035.06.200 "DI" Engine

KW: 38 Power 1/min: 1250 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 020 assembly

Opening |

Pressure bar: 172.00...175.00

Perforated-plate

diameter mm: 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery

Prestroke mm: 0.2

(from BDC): +0.02(0.04)

Injection pump setting values Test specifications in parentheses

Timing device travel

1/min: 1000 Speed

Setting value mm: 2.80...3.20

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1000 Speed

Setting value bar: 5.70...6.30

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 750

Del. quantity cm3/

1000S.: 65.00...66.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 3.5 1000S.: (4.0)

Low-idle speed regulation

Speed 1/min: 400

Del. quantity cm3/ 1000s.: 15.50...19.50

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.5 1000S.: (3.5)

Full-load speed regulation

1/min: 1350

Del. quantity cm3/

1000s.: 42.00...47.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 80.00...130.00

mind 1000s.: 80.00

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1250

TD travel mm: 4.40...5.20

mm: (4.10...5.50)

Shutoff

electromagnet Volt: 12 3rd speed 1/min: 1000

TD travel mm: 2.80...3.20

mm: (2.30...3.70)

Shutoff	4	Del. quantity cm3/: 63.5066.50
electromagnet Volt:	12	1000s.: (62.0068.00)
4th speed 1/min:		9th speed 1/min: 750
	1.101.90	Shutoff
	(0.802.20)	
Shutoff	(0.002.20)	electromagnet Volt: 12
	12	Del. quantity cm3/: 65.0066.00
electromagnet Volt:	16	1000s.: (62.5068.50)
Complete many many		10th speed 1/min: 500
Supply-pump pressure	e characteristic:	Shutoff
		electromagnet Volt: 12
1st speed 1/min:	500 +	Del. quantity cm3/: 56.5059.50
Supply-pump	+	1000s.: (55.0061.00)
	3.404.00	
Shutoff	+	Mech. shutoff:
electromagnet Volt:		Mech. Abstellung:
2nd speed 1/min:	1000	
Supply-pump	· +	1st speed
	5.76.300	Del. quantity cm3/: 0.003.00
Shutoff	1	10005.: (0.003.00)
electromagnet Volt:	12	Shutoff
3rd speed 1/min:		electromagnet volt: 12
Supply-pump	1	ceceronagnee voec. 12
	6.807.40	Electr. shutoff:
Shutoff	I	etectr. Silutorr.
electromagnet Volt:	12	1st speed 1/min. 100
etectionagnet vott.	12	1st speed 1/min: 400
Ound on a manufacture	a mad a contrar	Del. quantity cm3/: 0.003.00
Overlow quantity at	overflow valve:	10008.: (0.003.00)
Ant money A faction	· ·	Shutoff
1st speed 1/min:	503	electromagnet volt: -
Shutoff	†	
electromagnet Volt:	12 +	Idle delivery:
	41.7083.40	
quantity cm3/10s:		1st speed 1/min: 400
2nd speed 1/min:	1250	Shutoff
Shutoff	+	electromagnet Volt: 12
electromagnet Volt:	12 +	Del. quantity cm3/: 15.5019.50
Overflow:	55.60139.00	1000s.: (13.5021.50)
quantity cm3/10s:		Dispersion cm3/: 3.5
		1000s.: (3.5)
Delivery-quant. and	breakaway char.:	2nd speed 1/min: 475
diameter with	1	Shutoff
	1	electromagnet Volt: 12
2nd speed 1/min:	1450	Del. quantity cm3/: 0.003.00
Shutoff	I - 30	40000 - (0.00 7.00)
electromagnet Volt:	T *	
	12	1000s.: (0.003.00)
Dal reportity cm2/		
Del. quantity cm3/:	0.003.00	Automatic starting fuel delivery:
1000s.:	0.003.00 (0.003.00)	Automatic starting fuel delivery:
1000s.: 4th speed 1/min:	0.003.00 (0.003.00)	Automatic starting fuel delivery: 1st speed 1/min: 250
4th speed 1/min: Shutoff	0.003.00 (0.003.00) 1400	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff
1000s.: 4th speed 1/min: Shutoff electromagnet Volt:	0.003.00 (0.003.00) 1400	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet Volt: 12
1000s.: 4th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/:	0.003.00 (0.003.00) 1400 12 4.0016.00	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.0050.00
1000s.: 4th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.:	0.003.00 (0.003.00) 1400 12 4.0016.00 (0.0020.00)	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet Volt: 12
1000s.: 4th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min:	0.003.00 (0.003.00) 1400 12 4.0016.00 (0.0020.00)	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.0050.00 1000s.: -
1000s.: 4th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff	0.003.00 (0.003.00) 1400 12 4.0016.00 (0.0020.00) 1350	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.0050.00 1000s.: - 2nd speed 1/min: 150
1000s.: 4th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt:	0.003.00 (0.003.00) 1400 12 4.0016.00 (0.0020.00) 1350	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.0050.00
1000s.: 4th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/:	0.003.00 (0.003.00) 1400 12 4.0016.00 (0.0020.00) 1350	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.0050.00
1000s.: 4th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.:	0.003.00 (0.003.00) 1400 12 4.0016.00 (0.0020.00) 1350 12 43.0047.00 (39.0051.00)	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.0050.00
1000s.: 4th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/:	0.003.00 (0.003.00) 1400 12 4.0016.00 (0.0020.00) 1350 12 43.0047.00 (39.0051.00)	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.0050.00 1000s.: - 2nd speed 1/min: 150 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 90.00140.00
1000s.: 4th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.:	0.003.00 (0.003.00) 1400 12 4.0016.00 (0.0020.00) 1350 12 43.0047.00 (39.0051.00)	Automatic starting fuel delivery: 1st speed 1/min: 250 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.0050.00

Shutoff

electromagner Volt: 12

Del. quantity cm3/: 80.00...130.00

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: KF mm: 5.0..5.4
MS mm: 1.5..1.7
SVS max. mm: 4.7
Ya mm: 37.9...39

Ya mm: 37.9...39.9 Yb mm: 44.0...49.0

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : STE Edition : 2.94 replaces : 12.06.92 Calibrating oil : ISO-4113

Injection pump : VE3/11F1200R263-1 Type number : 0 460 413 007

Customer Part-No. :

Customer-specific information Customer : STEYR

Engine : WD311-85

Power KW: 41 1/min: 1200 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening

Pressure bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1000

Setting value mm: 5.80...6.20

Supply-pump pressure

1/min: 1000 Specd

Setting value bar: 6.20...6.80

Full-load del. w/out charge press.:

Sneed 1/min: 1000

Del. quantity cm3/

1000s.: 78.00...79.00

cm3/: 3.5 Dispersion 1000s.: (3.5)

Low-idle speed regulation

Speed 1/min: 300

Del. quantity cm3/

1000s.: 11.00...15.00

Del. quantity cm3/: 3.5 1000s.: (3.5)

Full-load speed regulation

Speed 1/min: 1300

Del. quantity cm3/

1000s.: 17.00...23.00

Start:

1/min: 100 Speed

Del. quantity cm3/: 84.00...134.00 mind 1000s.: 84.00

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1200

TD travel mm: 6.90...7.70

mm: (6.60...8.00)

3rd speed 1/min: 1000

TD travel mm: 5.80...6.20

mm: (5.30...6.70)

1/min: 500 4th speed

TD travel mm: 1.60...2.40 mm: (1.30...2.70)

Supply-pump pressure characteristic:

1st speed 1/min: 1200

Supply-pump

pressure bar: 7.00...7.60

2nd speed 1/min: 1000

Supply-pump

pressure bar: 6.20...6.80

3rd speed 1/min: 500

Supply-pump

pressure bar: 4.30...4.90

Overlow quantity at overflow valve:

1st speed 1/min: 500 : 41.70...83.40 Overflow quantity cm3/10s: (26.70...89.40) 2nd speed 1/min: 1200 Overflow : 55.60...139.00 cm3/10s: (40.60...154.00) quantity Delivery-quant, and breakaway char .: 2nd speed 1/min: 1350 Del. quantity cm3/: 0.00...3.00 1000\$.: (0.00...3.00) 1/min: 1300 5th speed Del. quantity cm3/: 17.00...23.00 1000s: (15.00...25.00) 3th speed 1/min: 1250 Det. quantity cm3/: 41.00...57.00 1000s: (39.00...59.00) 9th speed 1/min: 1175 Del. quantity cm3/: 76.50...79.50 1000s.: (75.70...80.30) 1/min: 1000 12th speed Del. quyntity cm3/: 78.00...79.00 1000s.: (76.20...80.80) 1/min: 500 20th speed Del. quantity cm3/: 72.50...75.50 1000s.: (71.50...76.50) Mech. shutoff: Mech. Abstellung: 1/min: 1175 1st speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Idle delivery: 1000s.: (9.00...17.00) cm3/: 3.5 Dispersion 1000s.: (3.5) 1/min: 330 2nd speed Del. quantity cm3/: 3.00...9.00 1000s.: (2.00...10.00) 3rd speed 1/min: 400 Del. quantity cm3/: 0.00...2.60 1000s.: (0.00...2.60) Automatic starting fuel delivery: 1/min: 170 1st speed Del. quantity cm3/: 84.00...134.60 1000s.: -2nd speed 1/min: 270 Del. quantity cm3/: 37.00...73.00 1000s .: -

Shutoff electromagnet:

Cut-in min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet Edition : 2.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE3/11F1200R263-4 Type number : 0 460 413 010

Customer Part-No. :

Customer-specific information Customer : STEYR

Engine : wD308.85 "DI"

Power KW: 35 1/min: 1200 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening

Pressure bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1000 Speed

Setting value mm: 5.00...5.40

Supply-pump pressure

Speed 1/min: 1000 Setting value bar: 5.70...6.30

Full-load del. w/out charge press.:

Speed 1/min: 1000

Del. quantity cm3/

1000s.: 64.00...65.00

Dispersion cm3/: 3.51000s.: (3.5)

Low-idle speed regulation

1/min: 300 Speed Del. quantity cm3/

1000s.: 17.00...21.00

Del. quantity cm3/: 3.5 1000s.: (3.5)

Full-load speed regulation

1/min: 1250 Speed

Del. quantity cm3/ 1000s.: 31.00...39.00

Start:

Speed 1/min: 100

Del. quantity cm3/: 70.00...120.00

1000s.: 70.00

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1200

mm: 6.70...7.50 TD travel mm: (6.40...7.80)

3rd speed 1/min: 1000

mm: 5.00...5.40 mm: (4.50...5.90) TD travel

1/min: 500 4th speed

mm: 0.50...1.30 TD travel mm: (0.20...1.60)

Supply-pump pressure characteristic:

1/min: 1200 1st speed

Supply-pump

bar: 6.50...7.10 pressure

1/min: 1000 2nd speed

Supply-pump

pressure bar: 5.70...6.30

1/min: 500 3rd speed

Supply-pump

bar: 3.90...4.50 pressure

Overlow quantity at overflow valve:

1st speed 1/min: 500 Overflow : 41.70...83.40 quantity cm3/10s: (26.70...89.40) 2nd speed 1/min: 1175 : 55.60...139.00 cm3/10s: (40.60...154.00) Overflow quantity Delivery-quant, and breakaway char .: 2nd speed 1/min: 1350 Del. quantity cm3/: 0.00...3.00 1000s.: (0.0G...3.00) 1/min: 1250 5th speed Del. quantity cm3/: 31.00...39.00 1000S.: (29.00...41.00) 8th speed 1/min: 1220 Del. quantity cm3/: 45.00...65.00 1000s.: -9th speed 1/min: 1175 Del. quantity cm3/: 61.00...64.00 1000s.: (59.70...65.30) 1/min: 1000 12th speed Del. quyntity cm3/: 64.00...65.00 1000s.: (62.00...67.00) 1/min: 500 20th speed Del. quantity cm3/: 57.50...60.50 1000s.: (56.50...61.50) Mech. shutoff: Mech. Abstellung: 1/min: 1175 1st speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Idle delivery: 1000s.: (15.00...23.00) cm3/: 3.5 Dispersion 1000s.: (3.5) 1/min: 330 2nd speed Del. quantity cm3/: 9.00...15.00 1000S.: (8.00...16.00) 3rd speed 1/min: 400 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 170 Del. quantity cm3/: 70.00...120.00 1000s.: -2nd speed 1/min: 270 Del. quantity cm3/: 25.00...55.00 1000s.: -

4th speed 1/min: 100 Del. quantity cm3/: 70.00...120.00 1000s.: -Mounting and assembly dimensions: Designation mm: 3.2...3.4 KF mm: 5.6...6.0 mm: 1.3...1.7 MS SVS max. mm: 5.0 mm: 37.2...39.2 Ya Yb mm: 48.0...56.4 Remarks: Ya = Distance between VE flange and speed-control lever in idle nosition Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : FIA Edition : 02.94 : 12.06.92 replaces Calibrating oil : ISO-4113

Injection pump : VE4/11F1350R257 Type number : 0 460 414 039

Customer Part-No. :

Customer-specific information Customer : IVECO-FIAT

Engine : 8040.25.200+220

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil •c return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 020 assembly

Opening |

bar: 172.00...175.00 Pressure

Perforated-plate

diameter mm: 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery

mm: 0.4 Prestroke

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000 Charge press. hPa: 1000

Setting value mm: 3.80...4.20 Shutoff

electromagnet Volt: 24

Supply-pump pressure

Speed 1/min: 1000 Charge press hPa: 1000 Setting value bar: 5.70...6.30

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

1/min: 800 Charge press. hPa: 1000 Del. quantity cm3/ 1000S.: 92.50...93.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 4.0 1000s.: (5.0)

Full-load del. w/out charge press.:

1/min: 500 Speed

Del. quantity cm3/ 1000s.: 67.50...70.50

Shutoff

electromagnet Volt: 24

Low-idle speed regulation

1/min: 350

Del. quantity cm3/

1000s.: 22.00...26.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 3.5 1000s.: (4.0)

Full-load speed regulation

1/min: 1500 Speed Charge press hPa: 1000

Del. quantity cm3/

1000s.: 34.00...40.00

Shutoff

electromagnet Voit: 24

Start:

Speed 1/min: 100 Del. quantity cm3/: 90.00...140.00

mind 1000s.: 90.00

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device chara	cteristic: +	1nd speed 1/min:	
2.1. 1. 4.1.	1750	Charge-air pressure	
2nd speed 1/min:		point hPa:	
	1000		4.4
	6.307.10	Shutoff	
	(6.007.40)	electromagnet Volt:	24
Shutoff	+	Del. quantity cm3/:	79.0080.00
electromagnet Volt:		1000s.:	(75.5083.50)
3rd speed 1/min:		2nd speed 1/min:	1600
Charge press hPa:	1000	Charge press. hPa:	
TD travel mm:	3.804.20	Shutoff	
	(3.304.70)	electromagnet Volt:	24
Shutoff	1	Del. quantity cm3/:	
electromagnet Volt:	24	1000s.:	(0.003.00)
4th speed 1/min:		5th speed 1/min:	
	1000	Charge press. hPa:	
TD travel mm:	1.702.50	Shutoff	1000
mm.	(1.402.80)	electromagnet Volt:	24
Shutoff	1	Del. quantity cm3/:	
electromagnet Volt:	26		(31.0043.00)
ctectionagnet vott.			
Supply-pump pressure	a characteristic.	9th speed 1/min:	
application to season	e characteristic:	Charge press. hPa:	1000
1st speed 1/min.	500	Shutoff	21
1st speed 1/min:		electromagnet Volt:	
Charge press. hPa:	1000	Del. quantity cm3/:	
Supply-pump	T +		(87.0094.00)
	3.604.20	12th speed 1/min:	
Shutoff	+	Charge press. hPa:	1000
electromagnet Volt:		Shutoff	
3rd speed 1/min:		electromagnet Volt:	
Charge press. hPa:	1000	Del. quyntity cm3/:	92.5093.50
Supply-pump	+		(89.5096.50)
pressure bar:	5.706.30	18th speed 1/min:	
Shutoff	+	Charge press. hPa:	
electromagnet Volt:	24 🗼	Shutoff	
4th speed 1/min:		electromagnet Volt:	24
Charge press. hPa:		Del. quantity cm3/:	
Supply-pump			(65.5072.50)
pressure bar:	7.007.60	20th speed 1/min:	
Shutoff		Charge press. hPa:	1000
electromagnet Volt:	24	Shutoff	1000
ctott sing ict voter	I	electromagnet Volt:	2/.
Overlow quantity at	overflow valve:		
over con quarterly at	T.	Del. quantity cm3/:	(86.5092.50)
1st speed 1/min:	sm T	10005.:	(00.3092.30)
Charge press. hPa:		Mach shipseff.	
Shutoff	1000	Mech. shutoff:	
	7/	Mech. Abstellung:	
electromagnet Volt:		A-1	4750
	41.7086.10	1st speed 1/min:	
	(26.70101.10)	Charge press. hPa:	
2nd speed 1/min:		Del. quantity cm3/:	
Charge press. hPa:	7000 +		(0.003.00)
Shutoff	+	Shutoff	
electromagnet Volt:		electromagnet volt:	24
	55.60139.00	_	
quantity cm3/10s:	(40.60154.00)	Electr. shutoff:	
	+		
Delivery-quant. and	breakaway char.:	1st speed 1/min:	350
	1	Del. quantity cm3/:	
	1	10000	(0,000 7,00)

Shutoff electromagnet volt: -Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 24
Del. quantity cm3/: 22.00...26.00
1000S.: (19.00...29.00)
Dispersion cm3/: 3.5
1000S.: (4.0) 1/min: 430 2nd speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 1/min: 400 3rd speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 3.00...13.00 1000s.: -Automatic starting fuel delivery: 1/min: 150 1st speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 90.00...140.00 1000s.: (90.00...140.00) 2nd speed 1/min: 250 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 40.00...60.00 1000s.: (40.00...60.00) 1/min: 100 4th speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 90.00...140.00 1000s.: (90.00...140.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: -KF mm: 5.1...5.5 MS mm: 1.2...1.6 mm: 5.3 SVS max. LDA stroke mm: 4.4 mm: 17.0...19.0 XK mm: 14.2...17.6 XL mm: 37.9...39.9 Ya

Yb mm: 45.4...50.7

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/11F1500R266 : 0 460 414 041 Type number

Customer Part-No.: 2643H061

Customer-specific information Customer : PERKINS

Engine : 500 HYDROVAN

TEST BENCH REQUIREMENTS

Calibrating-oil °C return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 022

Opening

Pressure bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery

Prestroke mm: 0.5

(from BDC): +-0.02(0.04)

Start of delivery block Piston stroke mm: 1,47

mm: +-0.02(0.06)

Outlet : A

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100 Speed

Setting value mm: 2.40...2.80

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1100

Setting value bar: 4.90...5.50

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 600

Del. quantity cm3/

1000s.: 33.00...34.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 3.5 1000s.: (3.5)

Low-idle speed regulation

1/min: 350

Del. quantity cm3/

1000s.: 11.00...15.60

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.0 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 1700

Del. quantity cm3/

1000s.: 7.00...13.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 70.00...100.00

1000s.: 70.00

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1500

mm: 3.70...4.50 TD travel

mm: (3.40...4.80)

Shutoff

electromagnet Volt: 12 3rd speed

1/min: 1100 mm: 2.40...2.80 TD travel mm: (1.90...3.30)

Shutoff

electromagnet Volt: 12 1/min: 700 4th speed

G07

mm: 0.40...1.20 TD travel Shutoff mm: (0.10...1.50) Shutoff electromagnet Volt: 12 5th speed 1/min: 1350 TD travel mm: 3.40...4.20 Shutoff electromagnet Volt: 12 Del. quyntity cm3/: 33.00...34.00 1000s.: (31.00...36.00) mm: (3.10...4.50) Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Mech. shutoff: 1/min: 700 1st speed Electr. shutoff: Supply-pump 1st speed 1/min: 350
Del. quantity cm3/: 0.00...3.00
1000S.: (0.00...3.00) pressure bar: 3.50...4.10 Shutoff electromagnet Volt: 12 1/min: 1100 2nd speed Shutoff Supply-pump electromagnet volt: bar: 4.90...5.50 pressure Shutoff Idle delivery: electromagnet Volt: 12 3rd speed 1/min: 1500 1/min: 350 1st speed Supply-pump Shutoff pressure bar: 6.40...7.00 electromagnet Volt: 12 Del. quantity cm3/: 11.00...15.00 1000s.: (9.00...17.00) Dispersion cm3/: 3.0 1000s.: (3.0) Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1/min: 400 2nd speed 1st speed 1/min: 600 Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 3.00...9.00 electromagnet Volt: 12 : 41.70...83.40 1000s.: (1.50...10.50) Overflow quantity cm3/10s: (26.70...98.40) 1/min: 460 3rd speed 2nd speed 1/min: 1500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...5.00 1000s.: (0.00...5.00) Shutoff electromagnet Volt: 12 : 55.60...139.00 Overflow quantity cm3/10s: (40.60...154.00) Automatic starting fuel delivery: Delivery-quant. and breakaway char.: 1st speed 1/min: 300 Shutoff 1/min: 1750 2nd speed electromagnet Volt: 12 Del. quantity cm3/: 36.00...52.00 1000s.: (36.00...52.00) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000S.: (0.00...3.00) 5th speed 1/min: 1700 1/min: 400 2nd speed Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12 Del. quantity cm3/: 7.00...13.00 Del. quantity cm3/: 24.50...39.50 1000s.: (24.50...39.50) 1000s.: (5.00...15.00) 1/min: 1500 9th speed 4th speed 1/min: 100 Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00...100.00 1000s.: (70.00...100.00) electromagnet Volt: 12 Del. quantity cm3/: 54.50...57.50 1000s.: (53.00...59.00) 10th speed 1/min: 1100

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: KF mm: KOT
MS1 mm: 1.5...1.7
SVS max. mm: 3.5
Ya mm: 28.5...30.5
Yb mm: 59.7...70.1

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : KHD Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/11F1400R39-2 Type number : 0 460 414 063

Customer Part-No. :

Customer-specific information Customer : DEUTZ

Engine : E 4 L913V

TEST BENCH REQUIREMENTS

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening

Pressure bar: 147.00...150.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1000 Speed

Setting value mm: 3.60...4.00

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1000

G10

Setting value bar: 5.70...6.30

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1000 Speed

Del. quantity cm3/

1000s.: 60.5...63.5

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 3.0 1000s.: (3.0)

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.0 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 1500

Del. quantity cm3/

1000s.: 32.00...41.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 75.00...105.00

mind 1000s.: 75.00

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1400

TD travel mm: 5.40...6.20 mm: (5.10...6.50)

Shutoff

electromagnet Volt: 12 1/min: 1000 3rd speed

mm: 3.60...4.00 TD travel mm: (3.10...4.50)

Shutoff

electromagnet Volt: 12 4th speed 1/min: 500

mm: 0.10...0.90 TD travel

mm: (0.00...1.20)

Shutoff

electromagnet Volt: 12

'	6th speed 1/min: 500
Supply-pump pressure characteristic:	Shutoff electromagnet Volt: 12
1st speed 1/min: 1400	Del. quantity cm3/: 56.0061.00
Supply-pump +	1000s.: (55.0062.00)
pressure bar: 6.907.50	
Shutoff	Mech. shutoff:
electromagnet Volt: 12	m) . 1 . ee
2nd speed 1/min: 1000	Electr. shutoff:
Supply-pump pressure bar: 5.706.30	1st speed 1/min: 350
Shutoff	Del. quantity cm3/: 0.003.09
electromagnet Volt: 12	1000S.: (0.003.00)
3rd speed 1/min: 500	Shutoff
Supply-pump +	electromagnet volt: 12
pressure bar: 4.204.80	
Shutoff	Idle delivery:
electromagnet Volt: 12	1-t 1/ 750
Overlow quantity at overflow valve:	1st speed 1/min: 350 Shutoff
T	electromagnet Volt: 12
1st speed 1/min: 500	Del. quantity cm3/: 13.017.0
Shutoff	1000s.: (11.019.0)
electromagnet Volt: 12	Dispersion cm3/: 3.0
Overflow : 41.7083.40	10008.: (3.0)
quantity cm3/10s: (26.7098.40)	3rd speed 1/min: 420
2nd speed 1/min: 2000	Del. quantity cm3/: 6.0010.00
Shutoff	1000s.: (4.0012.00)
electromagnet Volt: 12 + Overflow : 55.60139.00 +	4th speed 1/min: 500
Overflow : 55.60139.00 + quantity cm3/10s: (40.60154.00) +	Shutoff
quarterty (1115) (05: (40.00154.00)	electromagnet Volt: 12 Del. quantity cm3/: 0.001.60
Delivery-quant. and breakaway char.:	1000S.: -
	10001.
+	Automatic starting fuel delivery:
1nd speed 1/min: 1670	•
Shutoff	
electromagnet Volt: 12	2nd speed 1/min: 220
Del. quantity cm3/: 0.001.60	Shutoff
1000s.: - 2nd speed 1/min: 1580	electromagnet Volt: 12
Shutoff I	Del. quantity cm3/: 50.0060.00 1000s.: -
electromagnet Volt: 12	10003
Del. quantity cm3/: 7.0020.00	4th speed 1/min: 100
1000s.: -	Shutoff
3rd speed 1/min: 1500 +	electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 75.00105.00
electromagnet Volt: 12	1000s.: -
Del. quantity cm3/: 32.0041.00	
1000s.: - 4th speed 1/min: 1400	Shutoff electromagnet:
4th speed 1/min: 1400	Cut-in
electromagnet Volt: 12	min voltage : 10.0
Del. quantity cm3/: 53.0057.00	Rated voltage : 12.0
1000s.: (52.0058.00)	rateage . IE.O
5th speed 1/min: 1000	Mounting and assembly dimensions:
Shutoff	
electromagnet Volt: 12	Designation
Del. quantity cm3/: 60.5063.50	K mm: 3.23.4
1000s.: (59.5064.50) 4	KF mm: 5.Ω5.4

MS mm: 1.1...1.5
Ya mm: 35.2...37.2
Yb mm: 49.0...57.0

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : PER Edition : 02.94 : 07.10.91 replaces Calibrating oil : ISO-4113

Injection pump : VE4/11F1500R266-3 Type number : 0 460 414 090

Customer Part-No. :

Customer-specific information Customer : PERKINS

Engine : 500 GR DI.T/C

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Opening |

bar: 130.00...133.00 Pressure

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery

mm: 0.5 Prestroke

 $(from BDC): \leftarrow 0.02(0.04)$

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100

Setting value mm: 2.40...2.80

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1100 Speed

Setting value bar: 4.90...5.50

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1200

Del. quantity cm3/

1000s.: 61.50...62.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 3,5 10005.: (3,5)

Low-idle speed regulation

1/min: 350 Speed

Del. quantity cm3/

1**00**0s.: 11.00...15.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.0 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 1600

Del. quantity cm3/

1000S.: 12.00...18.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 70.00...110.00

1000s.: 70.00

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 1500 2nd speed

mm: 3.70...4.50 TD travel mm: (3.40...4.80)

Shutoff

electromagnet Volt: 12 3rd speed 1/min: 1100

mm: 2.40...2.80 mm: (1.90...3.30) TD travel

Shutoff

electromagnet Volt: 12 1/min: 700 4th speed

mm: 0.40...1.20 TD travel

mm: (0.10...1.50)

Shutoff electromagnet Volt: 12
5th speed 1/min: 1350
TD travel mm: 3.40...4.20 Del. quyntity cm3/: 61.50...62.50 1000s.: (59.50...64.50) 1/min: 600 15th speed Shutoff mm: (3.10...4.50) electromagnet Volt: 12 Del. quaritity cm3/: 27.50...29.50 Shutoff electromagnet Volt: 12 1000s.: (25.50...31.50) Supply-pump pressure characteristic: Mech. shutoff: 1st speed 1/min: 700 Electr. shutoff: Supply-pump bar: 3.50...4.10 pressure 1st speed 1/min: 350 Shutoff Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) electromagnet Volt: 12 2nd speed 1/min: 1100 Shutoff Supply-pump electromagnet volt: bar: 4.90...5.50 pressure Shutoff Idle delivery: electromagnet Volt: 12 3rd speed 1/min: 1500 1/min: 350 1st speed Supply-pump Shutoff bar: 6.40...7.00 pressure electromagnet Volt: 12 Shutoff Del. quantity cm3/: 11.00...15.00 electromagnet Volt: 12 1000s.: (9.00...17.00) cm3/: 3.0 1000s.: (3.0) 1/min: 400 Dispersion Overlow quantity at overflow valve: 2nd speed 1/min: 1200 1st speed Shutoff Shutoff electromagnet Volt: 12 : 41.70...83.40 cm3/10s: (26.70...98.40) quantity 2nd speed 1/min: 1500 Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...5.00 1000S:: (0.00...5.00) electromagnet Volt: 12 : 55.60...139.00 Overflow cm3/10s: (40.60...154.00) quantity Automatic starting fuel delivery: Delivery-quant. and breakaway char.: 1st speed 1/min: 300 Shutoff 3rd speed 1/min: 1650 electromagnet Volt: 12 Del. quantity cm3/: 35.00...65.00 1000s.: (35.00...65.00) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 2nd speed 1/min: 450 1/min: 1600 5th speed Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 24.00...40.00 1000s.: (24.00...40.00) 1/min: 100 4th speed Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00...110.00 1000s.: (70.00...110.00) Shutoff Shutoff electromagnet: electromagnet Volt: 12

Cut-in

Rated voltage : 10.0 : 12.0

Mounting and assembly dimensions:

Designation

K mm: -KF mm: KOT mm: 0.7...1.1 mm: 28.5...30.5 mn: 62.4...72.6 MS Ya YŁ

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0
ccm/1000 S.

Note inst. in remarks column

Test scheet : SOF : 02.94 Edition

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/11F1900R444 Type number : 0 460 414 091

Customer Part-No. :

Customer-specific information Customer : IVECO-SOFIM

: 8140.47.2785 "DI" Engine

KW: 85 Power 1/min: 1900 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly

Openina |

bar: 250.00...253.00 Pressure

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Charge press. hPa: 1000 Setting value mm: 2.00...2.40

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1250 Charge press hPa: 1000

Setting value bar: 5.30...5.90

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1750 Speed Charge press. hPa: 1000

Del. quantity cm3/ 1000s.: 58.00...59.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 550

Del. quantity cm3/ 1000s.: 25.00...26.00

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 325

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 6.0 1000s.: (6.5)

Full-load speed regulation

1/min: 2100 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 22.00...28.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 40.00...90.00

1000s.: 40.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

3rd speed 1/min: 1900 Speed 1/min: 1250 Charge press. hPa: 1000 hPa: 1000 Charge press Supply-pump Inj. gty. cm3/pressure bar: 7.60...8.20 difference 1000s.: -27.0...-35.0 # Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12 TD-travel dif.measurement Overlow quantity at overflow valve: correttore anticipo iniezione (SV) 1. Speed 1/min: 1250 1st speed 1/min: 800 Charge press hea: 1000 Charge press. hPa: 1000 TD-travel Shutoff difference mm: -0.6...-0.9 # electromagnet Volt: 12 : 75.00...119.50 Shutoff Overflow cm3/10s: (60.00...134.50) 1/min: 1900 electromagnet Volt: 12 quantity 2nd speed Inspection-pump test specifications Charge press. hPa: 1000 Shutoff Test specifications in parentheses electromagnet Volt: 12 Timing-device characteristic: : 97.30...180.70 Overflow | cm3/10s: (82.30...195.70) quantity 1/min: 1500 2nd speed hPa: 1000 Charge press Delivery-quant. and breakaway char.: TD travel mm: 3.60...4.40 mm: (3.30...4.70) Shutoff 1nd speed 1/min: 800 electromagnet Volt: 12
3rd speed 1/min: 1250
Charge press hPa: 1000
TD travel mm: 2.00...2.40 Charge-air pressure-setting point hPa: 400 LDA-stroke mm: 6.7 Shutoff mm: (1.50...2.90) electromagnet Volt: 12 Del. quantity cm3/: 43.00...44.00 Shutoff electromagnet Volt: 12 1000s.: (39.50...47.50) 1/min: 1000 4th speed 1/min: 2250 2nd speed Charge press hPa: 1000 Charge press. hPa: 1000 mm: 0.20...1.00 TD travel Shutoff mm: (0.00...1.40) Shutoff electromagnet Volt: 12 5th speed 1/min: 1900 Charge press. hPa: 1000 Charge press. hPa: 1000 TD travel mm: 4.50...5.30 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 22.00...28.00
1000S.: (20.50...29.50)
8th speed 1/min: 2000
Charge press. hPa: 1000
Shutoff mm: (4.20...5.60) Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: 1st speed 1/min: 800 electromagnet Volt: 12 Del. quantity cm3/: 41.00...49.00 1000s.: (39.00...51.00) Charge press. hPa: 1000 Supply-pump bar: 3.60...4.20 pressure 9th speed 1/min: 1900 Shutoff Charge press. hPa: 1000 electromagnet Volt: 12 Shutoff 2nd speed 1/min: 1250 electromagnet Volt: 12 Del. quantity cm3/: 58.00...63.00 1000s.: (57.00...64.00) 12th speed 1/min: 1750 Charge press. hPa: 1000 Supply-pump pressure bar: 5.30...5.90 Shutoff Charge press. hPa: 1000 electromagnet Volt: 12

Shutoff +	Shutoff
electromagnet Volt: 12	electromagnet Volt: 12
Del. quyntity cm3/: 58.0059.00	
1000s.: (55.0062.00) 15th speed 1/min: 1250	TD-travel dif.measurement:
Charge press. hPa: 1000	correttore anticipo iniezione (SV): 1st speed
Shutoff I	Charge press. hPa: 1000
electromagnet Volt: 12	TD-travel : -0.601.40'
Del. quantity cm3/: 52.5057.50	difference mm: -
1000s.: (51.0059.00)	Shutoff
18th speed 1/min: 550	electromagnet Volt: 12
Charge press. hPa: -	
Shutoff	SP pressdif.measurement:
electromagnet Volt: 12	pompa di mandata (FP):
Del. quantity cm3/: 25.0026.00	1st speed
1000s.: (22.0029.00) + 20th speed 1/min: 800	Charge press. hPa: 1000
Charge press. hPa: 1000	Supply pump- pressure : -0.100.30"
Shutoff	pressure : -0.100.30" difference bar: -
electromagnet Volt: 12	Shutoff
Del. quantity cm3/: 49.5058.50	electromagnet Volt: 12
1GOCS.: (48.5059.50)	order and grace voter 12
1	Automatic starting fuel delivery:
Mech. shutoff:	
+	1st speed 1/min: 200
Electr. shutoff:	Shutoff
1et energy 1/min. 705	electromagnet Volt: 12
1st speed 1/min: 325	Del. quantity cm3/: 55.00105.00
Del. quantity cm3/: 0.003.00 + 1000s.: (0.003.00)	1000s.: (55.00105.00)
Shutoff	2nd speed 1/min: 500
electromagnet volt: -	Shutoff
+	electromagnet Volt: 12
Idle delivery:	Del. quantity cm3/: 14.0030.00
'	10008.: (14.0030.00)
1st speed 1/min: 325	
Shutoff	4th speed 1/min: 100
electromagnet Volt: 12	Shutoff
Del. quantity cm3/: 10.0014.00	electromagnet Volt: 12
1000S:: (8.0016.00) + Dispersion cm3/: 6.0 +	Del. quantity cm3/: 40.0090.00
1000s.; (6.5)	1000s.: (40.0090.00)
2nd speed 1/min: 450	Shutoff electromagnet:
Shutoff	ondeon ececeromagnee.
electromagnet Volt: 12	Cut-in
Del. quantity cm3/: 0.003.00	min voltage : 10.0
1000s.: (0.003.00)	Rated voltage : 12.0
+ + + + + + + + -	
Load-dependent start of delivery:	Mounting and assembly dimensions:
Injqty.dif.measurement:	Dogianation
1st speed 1/min: 1250	Designation K mm: -
Charge press. hPa: 1000	K mm: - KF mm: KOT
Injqty. cm3/ : -28.030.0"	MS mm: 1.71.9
difference 1000s.: -	SVS max. mm: 0.9
Shutoff	LDA stroke mm: 6.7
electromagnet Volt: 12	Ya mm: 37.939.9
2nd speed 1/min: 1250	Yb mm: 44.950.3
Injaty. cm3/: +2.0+8.0'Z	
difference 1000s.: -	Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Z = Absolute delivery

Note inst. in remarks column

Test scheet : ROVER Edition : 02.94

replaces :

Calibrating oil : ISO-4113

Injection pump : VE4/11F2000R462 Type number : 0 460 414 093

Customer Part-No. :

Customer-specific information Customer : LANDROVER

Engine : GEMINI EGR "DI"

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp. °C

with thermometer : 54.00...56.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 116

Opening

Pressure bar: 207.00...210.00

Perforated plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery
Prestroke mm: (from BDC): -

Start of delivery block Piston stroke mm: 1.40

Outlet : C

Injection pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1600 Charge press. hPa: 1000

Setting value mm: 3.30...3.70

Shutoff

electromagnet Volt: 12

Supply-kimp pressure

Speed 1/min: 1600 Charge press hPa: 1000

Setting value bar: 6.10...6.70

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1400 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 63.10...64.10

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 3.0 1000s.: (4.0)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

1000s.: 34.50...35.50

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 4.0 10005:: (4.5)

Full-load speed regulation

Speed 1/min: 2100 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 52.30...58.30

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 80.00...130.00

mind 1000s.: 80.00

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Delivery-quant. and breakaway char.: Test specifications in parentheses Timing device characteristic: 1/min: 800 1nd speed Charge-air pressure-setting point hPa: 300 LDA-stroke mm: 7.0 1/min: 2000 hPa: 1000 mm: 5.90...6.70 mm: (5.40...7.20) 2nd speed Charge press LDA-stroke TD travel Shutoff Shutoff electromagnet Volt: 12 3rd speed 1/min: 1600 Charge press hPa: 1000 Charge press. hPa: 1000 mm: 3.30...3.70 TD travel Shutoff mm: (2.70...4.30) Shutoff electromagnet Volt: 12
4th speed 1/min: 1200
Charge press hPa: 1000
TD travel mm: 0.00...1.60 Charge press. hPa: 1000 Shutoff mm: (0.00...1.70) electromagnet Volt: 12 Del. quantity cm3/: 5.50...15.50 1000s.: (4.50...16.50) 5th speed 1/min: 2100 Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Charge press. hPa: 1000 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 52.30...58.30
1000s.: (50.30...60.30)
9th speed 1/min: 2000 1st speed 1/min: 2000 Charge press. hPa: 1000 Supply-pump bar: 7.40...8.00 pressure Charge press. hPa: 1000 Shutoff electromagnet Volt: 12 2nd speed 1/min: 1600 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 60.10...64.10 1000s.: (58.90...65.30) 10th speed 1/min: 1800 Charge press. hPa: 1000 Shutoff Charge press. hPa: 1000 Supply-pump pressure bar: 6.10...6.70 Shutoff electromagnet Volt: 12 3rd speed 1/min: 1200 Charge press. hPa: 1000 electromagnet Volt: 12 Del. quantity cm3/: 60.50...63.50 1000s.: (58.50...65.50) Supply-pump pressure bar: 5.00...5.60 1/min: 1400 12th speed Shutoff Charge press. hPa: 1000 electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Del. quyntity cm3/: 63.10...64.10 1000s.: (60.80...66.40) Overlow quantity at overflow valve: 1/min: 800 1/min: 800 1st speed 16th speed Charge press. hPa: 1000 Shutoff Charge press. hPa: -Shutoff electromagnet volt: 12 Del. quantity cm3/: 39.50...43.50 electromagnet Volt: 12 : 55.60...100.08 Overflow cm3/10s: (40.60...115.08) 1000H.: (38.00...45.00) quantity 1/min: 2000 2nd speed 18th speed 1/min: 500 Charge press. hPa: 1000 Charge press. hPa: -Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.50...35.50 1000s.: (31.80...38.20) electromagnet Volt: 12 : 83.40...166.80 Overflow quantity cm3/10s: (68.40...181.80) 1/min: 800 20th speed

Charge press. hPa: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 60.90...65.90 1000s.: (59.40...67.40) Mech. shutoff: Electr. shutoff: 1st speed 1/min: 300 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.00...14.00 1000s.: (7.00...17.00) cm3/: 4.0 Dispersion 1000S.: (4.5) 1/min: 500 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Part-load del.at 3rd inj.-qty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) mm: 12.0 Spacing 1st speed 1/min: 1000 Charge press. hPa: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.50...39.50 1000s.: (34.50...42.50) Automatic starting fuel delivery: 1/min: 150 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 82.00...132.00 1000S.: (80.00...134.00) 1/min: 350 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.00...70.00 1000s.: (30.00...70.00) 1/min: 100 4th speed

Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00...130.00 1000S.: (80.00...130.00) Shutoff electromagnet: Cut-in min voltage : 10.0 : 12.0 Rated voltage Mounting and assembly dimensions: Designation mm: 3.4...3.6 KF mm: KOT mm: 1.1...1.5 mm: 2.9 MS1 SVS max. LDA stroke mm: 7.0 mm: 42.3...46.3 Ya mm: 49.0...50.0 Ajustement Potentiometer: Supply voltage volt: 5.0 pot. Output volt volt: 2.5 pot. Remarks: Operate control lever after each manifold-pressure compensator pressure change. Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : PER Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VF4/11F2250R482 Type number : 0 460 414 094

Customer Part-No. :

Customer-specific information Customer : PERKINS

: T 4.20 (V) ARF Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Openina .

bar: 130.00...133.00 Pressure

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Lenath mm: 450

Start of delivery Prestroke mn: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Speed Charge press. hPa: 800

Setting value mm: 4.00...4.40

AFB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1500 Speed

Charge press hPa: 800 Setting value bar: 7.30...7.90

KSB/AFB

vaive Volt: 12

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1250 Speed Charge press. hPa: 800

Del. quantity cm3/

1000s.: 66.50...67.50

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 4.0 1000s.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 625

Del. quantity cm3/ 1000s.: 29.50...30.50

11

KSB/AFB valve Volt: 12

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 4.0

Low-idle speed regulation

Speed 1/min: 400

Del. quantity cm3/ 1000S.: 9.00...11.00

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.0 1000s.: (4.0)

Full-load speed regulation

Speed 1/min: 2525 Charge press hPa: 800

Del. quantity cm3/ 1000s.: 23.50...25.50

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 4	- KSB/AFB
Del. quantity cm3/: 60.0090.00	- valve Volt: 12
mind 1000s.: 60.00	- Shutoff
KSB/AFB	- electromagnet Volt: 12
Valve Volt: 12	- 2nd speed 1/min: 1500
Shutoff	
	Charge press. hPa: 800
electromagnet Volt: 12	- Supply-pump
Toppostion were took openifications	pressure bar: 7.307.90
Inspection pump test specifications	- KSB/AFB
Test specifications in parentheses	- valve Volt: 12
	- Shutoff
Timing-device characteristic:	electromagnet Volt: 12
†	- 3rd speed 1/min: 2000
2nd speed 1/min: 2000	- Charge press. hPa: 800
Charge press hPa: 800	- Supply-pump
TD travel mm: 6.106.90	pressure bar: 8.308.90
mm: (5.807.20)	- KSB/AFB
KSB/AFB	- valve Volt: 12
valve Volt: 12	- Shutoff
Shutoff	- electromagnet Volt: 12
electromagnet Volt: 12	
3rd speed 1/min: 1500	Overlow quantity at overflow valve:
Charge press hPa: 800	over tow qualitity at over itow valve.
TD travel mn: 4.004.40	- 1st speed 1/min: 625
mm: (3.604.80)	
KSB/AFB	Charge press. hPa: -
	KSB/AFB
	valve Volt: 12
Shutoff	- Shutoff
electromagnet Volt: 12	electromagnet Volt: 12
4th speed 1/min: 1000	Overflow : 75.00119.50
Charge press hPa: 800	- quantity cm3/10s: (60.00134.50)
TD travel mm: 1.902.70	- 2nd speed 1/min: 2250
mm: (1.603.00)	Charge press. hPa: 800
KSB/AFB +	KSB/AFB
valve Volt: 12	valve Volt: 12
	, ASTAG AOTE: 15
Shutoff	Shutoff
Shutoff electromagnet Volt: 12	- Shutoff
Shutoff	Shutoff electromagnet Volt: 12
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800	Shutoff electromagnet Volt: 12 Overflow: 97.30180.70
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800	Shutoff electromagnet Volt: 12
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70)
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70)	Shutoff electromagnet Volt: 12 Overflow: 97.30180.70
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70)
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: -	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.:
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery-quant. and breakaway char.: 1nd speed 1/min: 1000
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery-quant. and breakaway char.: Ind speed 1/min: 1000 Charge-air pressure-setting
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 500	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery-quant. and breakaway char.: Ind speed 1/min: 1000 Charge-air pressure-setting point hPa: 300
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 500 Charge press. hPa: 800	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.: Ind speed 1/min: 1000 Charge—air pressure—setting point hPa: 300 LDA—stroke mm: 7.1
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 500 Charge press. hPa: 800 TD travel mm: 2.102.30 A	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.: Ind speed 1/min: 1000 Charge—air pressure—setting point hPa: 300 LDA—stroke mm: 7.1 KSB/AFB
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 500 Charge press. hPa: 800 TD travel mm: 2.102.30 A mm: (1.403.00)	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery-quant. and breakaway char.: Ind speed 1/min: 1000 Charge-air pressure-setting point hPa: 300 LDA-stroke mm: 7.1 KSB/AFB valve Volt: 12
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.5G3.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 500 Charge press. hPa: 800 TD travel mm: 2.102.30 A mm: (1.403.00) KSB/AFB	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.: Ind speed 1/min: 1000 Charge—air pressure—setting point hPa: 300 LDA—stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 500 Charge press. hPa: 800 TD travel mm: 2.102.30 A mm: (1.403.00) KSB/AFB valve Volt: -	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.: Ind speed 1/min: 1000 Charge—air pressure—setting point hPa: 300 LDA—stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 500 Charge press. hPa: 800 TD travel mm: 2.102.30 A mm: (1.403.00) KSB/AFB valve Volt: - Shutoff	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.: Ind speed 1/min: 1000 Charge—air pressure—setting point hPa: 300 LDA—stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 500 Charge press. hPa: 800 TD travel mm: 2.102.30 A mm: (1.403.00) KSB/AFB valve Volt: -	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery-quant. and breakaway char.: Ind speed 1/min: 1000 Charge-air pressure-setting point hPa: 300 LDA-stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 58.5059.50 1000S.: (55.5062.50)
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.5G3.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 500 Charge press. hPa: 800 TD travel mm: 2.102.30 A mm: (1.403.00) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.: Ind speed 1/min: 1000 Charge—air pressure—setting point hPa: 300 LDA—stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 58.5059.50 1000s.: (55.5062.50) 3rd speed 1/min: 2625
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B mm: (1.303.70) KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 500 Charge press. hPa: 800 TD travel mm: 2.102.30 A mm: (1.403.00) KSB/AFB valve Volt: - Shutoff	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery-quant. and breakaway char.: Ind speed 1/min: 1000 Charge-air pressure-setting point hPa: 300 LDA-stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 58.5059.50 1000s.: (55.5062.50) 3rd speed 1/min: 2625 Charge press. hPa: 800
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.503.50 B	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery-quant. and breakaway char.: Ind speed 1/min: 1000 Charge-air pressure-setting point hPa: 300 LDA-stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 58.5059.50 1000s.: (55.5062.50) 3rd speed 1/min: 2625 Charge press. hPa: 800 KSB/AFB
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.5G3.50 B	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.: Ind speed 1/min: 1000 Charge—air pressure—setting point hPa: 300 LDA—stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 58.5059.50 1000S.: (55.5062.50) 3rd speed 1/min: 2625 Charge press. hPa: 800 KSB/AFB valve Volt: 12
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.5G3.50 B	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.: Ind speed 1/min: 1000 Charge—air pressure—setting point hPa: 300 LDA—stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 58.5059.50 1000s.: (55.5062.50) 3rd speed 1/min: 2625 Charge press. hPa: 800 KSB/AFB valve Volt: 12 Shutoff
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.5G3.50 B	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.: Ind speed 1/min: 1000 Charge—air pressure—setting point hPa: 300 LDA—stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 58.5059.50 1000S.: (55.5062.50) 3rd speed 1/min: 2625 Charge press. hPa: 800 KSB/AFB valve Volt: 12
Shutoff electromagnet Volt: 12 8th speed 1/min: 800 Charge press. hPa: 800 TD travel mm: 1.5G3.50 B	Shutoff electromagnet Volt: 12 Overflow : 97.30180.70 quantity cm3/10s: (82.30195.70) Delivery—quant. and breakaway char.: Ind speed 1/min: 1000 Charge—air pressure—setting point hPa: 300 LDA—stroke mm: 7.1 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 58.5059.50 1000s.: (55.5062.50) 3rd speed 1/min: 2625 Charge press. hPa: 800 KSB/AFB valve Volt: 12 Shutoff

Del. quantity cm3/: 0.0010.00	Mech. shutoff:
1000s.: (0.0010.00)	†
5th speed 1/min: 2525	Electr. shutoff:
Charge press. hPa: 800 - KSB/AFB -	1st speed 1/min /00
valve Volt: 12	1st speed 1/min: 400 Del. quantity cm3/: 0.003.00
Shutoff	1000s.: (0.003.00)
electromagnet Volt: 12	Shutoff
Del. quantity cm3/: 23.5025.50	electromagnet volt: -
1000\$.: (20.5028.50)	KSB/AFB
9th speed 1/min: 2250 -	valve Volt: 12
Charge press. hPa: 800	10000
KSB/AFB	Idle delivery:
valve Volt: 12	
Shutoff	- 1st speed 1/min: 400
electromagnet Volt: 12	KSB/AFB
Del. quantity cm3/: 70.0074.00	valve Volt: 12
1000s.: (69.0075.00)	Shutoff
12th speed 1/min: 1250	electromagnet Volt: 12
Charge press. hPa: 800	Del. quantity cm3/: 9.0011.00
KSB/AFB	1000s.: (6.0014.00)
valve Volt: 12	Dispersion cm3/: 3.0
Shutoff	1000s.: (4.0)
electromagner Volt: 12	2nd speed 1/min: 500
Del. quyntity cm3/: 66.5067.50	KSB/AFB
1000s.: (64.5069.50)	valve Volt: 12
18th speed 1/min: 625	Shutoff
Charge press. hPa: - KSB/AFB	electromagnet Volt: 12
valve Volt: 12	Del. quantity cm3/: 0.005.00
Shutoff	1000s.: (0.005.00)
electromagnet Volt: 12	Dant-land dol at 7nd ini
Del. quantity cm3/: 29.5030.50	Part-load del.at 3rd injqty.
1000\$.: (27.0033.00)	terza fermo della portata stop (EGR set)
20th speed 1/min: 1000	scarico) (ARF)
Charge press. hPa: 800	gaz d'échappement-ARF)
KSB/AFB	Spacing mm: 12.0
valve Volt: 12	packing him. 12.0
Shutoff	1st speed 1/min: 800
electromagnet Volt: 12	Charge press. hPa: 800
Del. quantity cm3/: 69.5072.50	- KSB/AFB
1000s.: (67.5074.50)	valve Volt: 12
21th speed 1/min: 500	- Shutoff
Charge press. hPa: -	- electromagnet Volt: 12
KSB/AFB	- Del. quantity cm3/: 17.5018.50
valve Volt: 12	- 1000s.: (15.5020.50)
Shutoff -	
electromagnet Volt: 12	Automatic starting fuel delivery:
Del. quantity cm3/: 27.5032.50	•
1000s.: (26.0034.00)	
	- 2nd speed 1/min: 350
Malifornia maraka arabi	- KSB/AFB
Delivery-quant. and breakaway char.:	valve Volt: 12
Inf acts unline terms assessed to	- Shutoff
Injqty.values,tempcompensated	electromagnet Volt: 12
temperatura -	Pel. quantity cm3/: 20.0040.00
Del. quantity cm3/: 0.0010.00	1000s.: (20.0040.00)
1000S.: (0.0010.00)	- 4th speed 1/min: 100
100000 100000 100000 100000 100000 100000 100000 100000 1000000	c -9.00 306554 1/8000 1881

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 60.00...90.00

1000s.: (60.00...90.00)

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.3...3.5

KF mm: KOT LDA stroke

mm: 7.1 mm: 37.0...39.0 mm: 55.5...66.5 Ya Yb

Ajustement Potentiometer:

Supply voltage

volt: 5.0 pot.

Output volt

pot. volt: 2.43

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

A = KSB adjustment point B = KSB curve point

Note inst. in remarks column

Test scheet : SOF : 02.94 Edition

replaces

Calibrating oil : ISO-4113

: VE4/11F1900R494 Injection pump : 0 460 414 097 Type number

Customer Part-No. :

Customer-specific information Customer : IVECO-SOFIM

Engine : 8140.47.2585 "DI"

KW: 85 Power Speed 1/min: 1900

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly

Opening |

Pressure bar: 250.00...253.00

Perforated plate

mm: 0.5 diameter

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Lenath

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Speed Charge press. hPa: 1000 Setting value mm: 2.00...2.40

Shirtoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250 Speed Charge press hea: 1000

Setting value bar: 5.30...5.90

Shutoff

electromagnet Volt: 12

rull-load del. with charge press.:

1/min: 1750 Speed Charge press. hPa: 1000

Del. quantity cm3/ 1000s.: 58.00...59.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5)

Full-load del. w/out charge press.:

1/min: 550 Speed

Del. quantity cm3/

1000s.: 25.00...26.00

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 325

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 6.0 1000s.: (6.5)

Full-load speed regulation

1/min: 2100 Speed Charge press hPa: 1000

Del. quantity cm3/

1000s.: 22.00...28.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 40.00...90.00

1000s.: 40.00 mind

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

3rd speed 1/min: 1900 1/min: 1250 hPa: 1000 Speed Charge press. hFa: 1000 Charge press Supply-pump Inj.-qty. cm3/pressure bar: 7.60...8.20 difference 1000s.: -27.0...-35.0 # Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12 TD-travel dif.measurement Overlow quantity at overflow valve: correttore anticipo iniezione (SV) 1.Speed 1/min: 1250 1st speed 1/min: 800 Charge press hPa: 1000 Charge press. hPa: 1000 TD-travel Shutoff difference mm: -0.7...-0.5 # electromagnet Volt: 12 Shutoff Overflow : 75.00...119.50 quantity cm3/10s: (60.00...134.50) 2nd speed 1/min: 1900 electromagnet Volt: 12 Inspection-pump test specifications Test specifications in parentheses Charge press. hPa: 1000 Shutoff electromagnet Volt: 12 : 97.30...180.70 Timing-device characteristic: Overflow guantity cm3/10s: (82.30...195.70) 1/min: 1500 2nd speed hPa: 1000 Charge press Delivery-quant. and breakaway char .: TD travel mm: 3.60...4.40 mm: (3.30...4.70) Shutoff 1nd speed 1/min: 800 electromagnet Volt: 12
3rd speed 1/min: 1250
Charge press hPa: 1000
TD travel mm: 2.00...2.40 Charge-air pressure-setting point hPa: 400 mm: 7.1 LDA-stroke Shutoff electromagnet Volt: 12 Del. quantity cm3/: 43.00...44.00 1000s.: (39.50...47.50) mm: (1.50...2.90) Shutoff electromagnet Volt: 12 4th speed 1/min: 1000 1/min: 2250 2nd speed Charge press hPa: 1000 Charge press. hPa: 1000 mm: 0.20...1.00 TD travel Shutoff mm: (0.00...1.30) electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000S:: (0.00...3.00) Shutoff electromagnet Volt: 12 5th speed 1/min: 1900 5th speed 1/min: 2100 Charge press. hPa: 1000 Charge press. hPa: 1000 mm: 4.50...5.30 TD travel Shutoff electromagnet Volt: 12
Del. quantity cm3/: 22.00...28.00
1000s.: (20.50...29.50)
8th speed 1/min: 2000 mm: (4.20...5.60) Shutoff electromagnet Volt: 12 Charge press. hPa: 1000 Shutoff Supply-pump pressure characteristic: 1st speed 1/min: 800 electromagnet Volt: 12 Del. quantity cm3/: 41.00...49.00 1000s.: (39.00...51.00) Charge press. hPa: 1000 Supply-pump pressure bar: 3.60...4.20 9th speed 1/min: 1900 Shutoff Charge press. hPa: 1000 electromagnet Volt: 12 2nd speed 1/min: 1250 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 58.00...63.00 1000s.: (57.00...64.00) 12th speed 1/min: 1750 Charge press. hPa: 1000 Supply-pump pressure bar: 5.30...5.90 Shutoff Charge press. hPa: 1000 electromagnet Volt: 12

Shutoff electromagnet Volt:		‡	Injqty. cm3/: difference 1000S::	
Del. quyntity cm3/:	58.0059.00 (55.0062.00)	†	Shutoff electromagnet Volt:	
Charge press. hPa: Shutoff	1000	Ŧ	TD-travel dif.measu	iniezione (SV):
	52.5057.50 (51.0059.00)	‡	1st speed 1/min: Charge press. hPa: TD-travel	
18th speed 1/min: Charge press. hPa: Shutoff		†	difference mm: Shutoff electromagnet Volt:	
electromagnet Volt: Del. quantity cm3/:	12 25.0026.00 (22.0029.00)	+	SP press.—dif.measu pompa di mandata (F	irement:
20th speed 1/min: Charge press. hPa: Shutoff	800	Ŧ	1st speed 1/min: Charge press. hPa:	1250
electromagnet Volt: Del. quantity cm3/:	49.5058.50	‡	difference bar:	-0.10.3 "
Mech. shutoff:	(48.5059.50)	‡	Shutoff electromagnet Volt:	12
Electr. shutoff:		+	Automatic starting	fuel delivery:
1st speed 1/min:		‡	1st speed 1/min: Shutoff	200
	0.003.00 (0.003.00)	‡	electromagnet Volt: Del. quantity cm3/:	55.00105.00
Shutoff electromagnet volt:	~	‡		(55.00105.00)
Idle delivery:		‡	2nd speed 1/min: Shutoff	
1st speed 1/min: Shutoff		Ī	<pre>electromagnet Volt: Del. quantity cm3/: 1000S.:</pre>	
electromagnet Volt: Del. quantity cm3/: 1000S.:	10.0014.00 (8.0016.00)	†	4th speed 1/min: Shutoff	100
Dispersion cm3/: 1000s.: 2nd speed 1/min:	(6.5)	†	electromagnet Volt: Del. quantity cm3/: 1000s.:	
Shutoff electromagnet Volt:		‡	Shutoff electromagn	
Del. quantity cm3/: 1000s.:	0.003.00 (0.003.00)	‡	Cut-in	
Load-dependent start Injqty.dif.measure		‡	min voltage : Rated voltage :	10.0 12.0
1st speed 1/min:		‡	Mounting and assemb	ly dimensions:
Charge press. hPa: Injqty. cm3/ : difference 1000S.:	-28.030.0"	†	Designation K mm: KF mm:	- KOT
Shutoff electromagnet Volt:	12	‡	MS1 mm: SVS max. mm:	1.62.0 5.2
2nd speed 1/min: Charge press. hPa:		‡	Ya mm:	7.1 37.839.9 44.950.3

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Z = Absolute delivery

Note inst. in remarks column

Test scheet : ROVER Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/11F2000R509 Type number : 0 460 414 098

Customer Part-No. :

Customer-specific information

Customer : LANDROVER 2.5 TDI

Engine : GEMINI 3 "DI"

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 116 assembly

Opening

bar: 207.00...210.00 Pressure

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Start of delivery block Piston stroke mm: 1.54 Outlet.

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1600 Speed

Charge press. hPa: 1000 Setting value mm: 3.50...3.90

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1600 Charge press hPa: 1000

Setting value bar: 6.50...7.10

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1400 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 66.50...67.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 3.0 1000s.: (4.0)

Full-load del. w/out charge press.:

1/min: 500

Del. quantity cm3/ 1000s.: 36.00...37.00

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

1000s.: 8.00...12.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 4.0 1000s.: (4.5)

Full-load speed regulation

Speed 1/min: 2100 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 55.00...59.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 85.00...135.00 mind 1000s.: 85.00

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications

H03

Test specifications in parentheses	
Timing-device characteristic:	- 1nd speed 1/min: 800
	- Charge-air pressure-setting
2nd speed 1/min: 2000	- point h?a: 300
Charge press hPa: 1000	- LDA-stroke mm: 7.0
TD travel mm: 5.206.00	- Shutoff
mm: (4.706.50)	- electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 51.0052.00
electromagnet Volt: 12	- 1000s.: (48.3054.70)
3rd speed 1/min: 1600	- 2nd speed 1/min: 2608
Charge press hPa: 1000	- Charge press. hPa: 1000
TD travel rm: 3.503.90	- Shutoff
mm: (2.904.50)	electromagnet Volt: 12
Shutoff	- Del. quantity cm3/: 0.003.00
electromagnet Volt: 12	- 1000s.: (0.003.00)
4th speed 1/min: 1200	- 3rd speed 1/min: 2400
Charge press hPa: 1000	
TD travel mm: 1.101.90	- Charge press. hPa: 1000
mm: (0.602.40)	- Shutoff
Shutoff	electromagnet Volt: 12
	- Del. quantity sm3/: 7.0017.00
electromagnet Volt: 12	1000S.: (6.0018.00)
Cimpliani ma apagoina abanyakaniakia.	- 5th speed 1/min: 2100
Supply pump pressure characteristic:	- Charge press. hPa: 1000
1-t	- Shutoff
1st speed 1/min: 2000	- electromagnet Volt: 12
Charge press. hPa: 1000	- Del. quantity cm3/: 55.0059.00
Supply-pump	- 1000s.: (52.0062.00)
pressure bar: 7.708.30	- 9th speed 1/min: 2000
Shutoff	- Charge press. hPa: 1000
electromagnet Volt: 12	- Shutoff
2nd speed 1/min: 1600	- electromagnet Volt: 12
Charge press. hPa: 1000	- Del. quantity cm3/: 64.0068.00
Supply-pump	- 1000s.: (62.8069.20)
pressure bar: 6.507.10	- 12th speed
Shutoff	- Charge press. hPa: 1000
electromagnet Volt: 12	- Shutoff
3rd speed 1/min: 1200	- electromagnet Volt: 12
Charge press. hPa: 1000	- Del. quyntity cm3/: 66.5067.50
Supply-pump -	- 1000s.: (64.2069.80)
pressure bar: 5.305.90	- 18th speed
Shutoff	- Charge press. hPa: -
electromagnet Volt: 12	- Shutoff
	- electromagnet Volt: 12
Overlow quantity at overflow valve:	- Del. quantity cm3/: 36.0037.00
	- 1000s.: (33.3039.70)
1st speed 1/min: 500	- 20th speed 1/min: 900
Charge press. hPa: 1000	- Charge press. hPa: 1000
Shutoff	- Shutoff
electromagnet Volt: 12	- electromagnet Volt: 12
Overflow : 55.60100.00	- Del. quantity cm3/: 61.6066.60
quantity cm3/10s: (40.60115.00)	- 1000S.: (60.1068.10)
2nd speed 1/min: 2000	-
Charge press. hPa: 1000	- Mech. shutoff:
Shutoff	-
electromagnet Volt: 12	- Electr. shutoff:
Overflow : 83.40166.80	-
quantity cm3/10s: (68.40181.80)	- 1st speed 1/min: 350
	- Del. quantity cm3/: 0.003.00
Delivery-quant. and breakaway char.:	1000s.: (0.003.00)
Total of Addition and State of Container Citation	10003 (0.003.00)

H04

Shutoff electromagnet volt: 2nd speed 1/min: 350
Del. quantity cm3/: 0.00...3.00 1000S.: (0.00...3.00) Shutoff electromagnet Volt: -Idle delivery: 1/min: 350 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 8.00...12.00 1000S.: (5.00...15.00) cm3/: 4.0 Dispersion 1000s.: (4.5) 1/min: 500 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 200 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 90.00...140.00 1000s.: (90.00...140.00) 1/min: 350 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.00...70.00 1000s.: (30.00...70.00) 1/min: 100 4th speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 85.00...135.00 1000s.: (84.50...135.50) Shutoff electromagnet: Cut-in min voltage : 10.0 : 12.0 Rated voltage Mounting and assembly dimensions: Designation mm: 3.2...3.4 mm: KOT K KF MS1 mm: 0.9...1.2 LDA stroke mm: 7.0 mm: 42.3...46.3 Ya

mm: 50.0...61.0

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

H05

Remarks:

Yb

Note inst. in remarks column

Test scheet : ROVER Edition : 02.94

replaces :-

Calibrating oil : ISO-4113

Injection pump : VE4/11F2000R509-1 Type number : 0 460 414 099

Customer Part-No.:

Customer-specific information

Customer : LANDROVER 2.5 TDI

Engine : GEMINI 3 ''DI''

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp. "C

with thermometer : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 116

Opening

Pressure bar: 207.00...210.00

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery
Prestroke mm: (from BDC): -

Start of delivery block Piston stroke mm: 1.4 mm: -

Outlet : C

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1600 Charge press. hPa: 1000

Setting value mm: 3.50...3.90

Shutoff

electromagnet Voit: 24

Supply-pump pressure

Speed 1/min: 1600 Charge press hPa: 1000

Setting value bar: 6.50...7.10

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

Speed 1/min: 1400 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 66.50...67.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 3.0 1000S.: (4.0)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

1000s.: 36.00...37.00

Shutoff

electromagnet Voit: 24

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

1000s.: 8.00...12.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 4.0 1000S.: (4.5)

Full-load speed regulation

Speed 1/min: 2100 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 55.00...59.00

Shutoff

electromagnet Volt: 24

Start:

Speed 1/min: 100

Del. quantity cm3/: 44.00...46.00 V

mind 1000s.: 44.00

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses Delivery-quant. and breakaway char.: Timing-device characteristic: 1nd speed 1/min: 800 Charge-air pressure-setting point hPa: 300 LDA-stroke mm: 7.0 1/min: 2000 2nd speed Charge press hPa: 1000 TD travel mm: 5.10...5.90 Shutoff mm: (4.60...6.40) Shutoff electromagnet Volt: 24
3rd speed 1/min: 1600
Charge press hPa: 1000
TD travel mm: 3.10...3.50 Charge press. hPa: 1000 Shutoff rm: (2.50...4.10) electromagnet Volt: 24 3rd speed 1/min: 2400 Charge press. hPa: 1000 Shutoff Shutoff electromagnet Volt: 24 4th speed 1/min: 1400 Charge press hPa: 1000 mm: 1.60...2.40 mm: (1.10...2.90) TD travel Shutoff electromagnet Volt: 24 Supply-pump pressure characteristic: Charge press. hPa: 1000 Shutoff electromagnet Volt: 24

Del. quantity cm3/: 55.00...59.00

1000S.: (52.00...62.00)

9th speed 1/min: 2000 1st speed 1/min: 2000 Charge press. hPa: 1000 Supply-pump pressure bar: 7.70...8.30 Charge press. hPa: 1000 Shutoff Shutoff electromagnet Volt: 24 2nd speed 1/min: 1600 Charge press. hPa: 1000 electromagnet Volt: 24
Del. quantity cm3/: 64.00...68.00
1000S.: (62.80...69.20) Supply-pump 1/min: 1400 pressure bar: 6.50...7.10 12th speed Shutoff Charge press. hPa: 1000 electromagnet Volt: 24 3rd speed 1/min: 1400 Shutoff electromagnet Volt: 24
Del. quyntity cm3/: 66.50...67.50
1000S.: (64.20...69.8) Charge press. hPa: 1000 Supply-pump bar: 5.80...6.40 pressure 1/min: 500 18th speed Shutoff Charge press. hPa: electromagnet Volt: 24 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 36.00...37.00 1000s.: (33.30...39.70) Overlow quantity at overflow valve: cuth speed 1/min: 900 Charge press. hPa: 1000 Shutoff 1st speed 1/min: 500 Charge press. hPa: 1000 Shutoff electromagnet Volt: 24
Overflow : 55.60...100.00
quantity cm3/10s: (40.60...115.00)
2nd speed 1/min: 2000 electromagnet Volt: 24 Del. quantity cm3/: 61.60...66.60 1000s.: (60.10...68.10) Charge press. hPa: 1000 Mech. shutoff: Shutoff electromagnet Volt: 24 Electr. shutoff: : 83.40...166.80 Overflow quantity cm3/10s: (68.40...181.80)

1st speed

1/min: 350

Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: -2nd speed 1/min: 350 Del. quantity cm3/: 0.00...3.00 1000\$.: (0.00...3.00) Shutoff electromagnet Volt: -Idle delivery: 1/min: 350 1st speed Shutoff electromagnet voit: 24 Del. quantity cm3/: 8.00...12.00 1000s.: (5.00...15.00) cm3/: 4.0 Dispersion 1000s.: (4.5) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Part-load del.at 3rd ini.-gty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0 1st speed 1/min: 1000 Charge press. hPa: 1000 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 38.00...40.00 1000s.: (35.00...43.00) Automatic starting fuel delivery: 1st speed 1/min: 200 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 90.00...140.00 1000s.: (90.00...140.00) 1/min: 350 2nd speed Shutoff electromagnet Volt: 24
Del. quantity cm3/: 30.00...70.00
1000S.: (30.00...70.00) 3rd speed 1/min: 100 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 97.0...99.0 "V" 1000s.: (90.50...105.50) 1/min: 100 4th speed

Shutoff electromagnet Volt: 24 Del. quantity cm3/: 44.0...46.0 "L" 1000s.: (37.50...52.50) Shutoff electromagnet: Cut-in : 20.0 min voltage Rated voltage : 24.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 KF mm: KOT mm: 1.1...1.5 MS1 mm: 7.0 LDA stroke mm: 42.3...46.3 Ya mm: 50.0...61.0 Yb Remarks: Operate control lever after each manifold-pressure compensator pressure change. Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head and

Starting delivery check V = Speed-control lever in full-load position

Starting delivery check L = Speed-control lever in idle position

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Note inst. in remarks column

Test scheet : PEN Edition : 02.94 replaces

Calibrating oil : ISO-4113

Injection pump : VE4/11F1900L519 Type number : 0 460 414 101

Customer Part-No. :

Customer-specific information

Customer : PENTA

: TAMD 31 "DI" Engine

TEST BENCH REQUIREMENTS

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 110

Openina |

bar: 250.00...253.00 Pressure

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery

Prestroke mm: 0.3

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Charge press. hPa: 1000

Setting value mm: 1.80...2.20

Supply-pump pressure

1/min: 1500 Speed Charge press hPa: 1000

Setting value bar: 6.40...7.00

Full-load del. with charge press.:

1/min: 1500 Speed Charge press. hPa: 1000

Del. quantity cm3/ 1000s.: 56.50...57.50

cm3/: 5.0 1000s.: (5.0) Dispersion

Full-load del. w/out charge press.:

1/min: 650 Speed

Del. quantity cm3/

1**000**\$.: 35.00...36.00

Low-idle speed regulation

1/min: 300 Speed

Del. quantity cm3/

1000S.: 11.00...15.00 Del. quantity cm3/: 6.0 1000s.: (6.0)

Full-load speed regulation

1/min: 2150 Speed Charge press hPa: 1000

Del. quantity cm3/

1000s.: 19.00...25.00

Start:

Speed 1/min: 100 Del. quantity cm3/: 20.00...70.00 mind 1000S.: 20.00

Inspection pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 1900 hPa: 1000 2nd speed Charge press

TD travel mm: 4.00...4.80

mm: (3.70...5.10)

1/min: 1500 3rd speed Charge press hPa: 1000

TD travel mm: 1.80...2.20

mm: (1.30...2.70) 1/min: 1700

6th speed Charge press. hPa: 1000

mm: 2.60...3.60 TD travel mm: (2.40...3.80)

Supply-pump pressure characteristic:

1st speed 1/min: Charge press. hPa:		Del. quantity cm3/: 56.0061.00 1000s.: -
Supply-pump	77.70	
pressure bar: 2nd speed 1/min:	7.708.50	Mech. shutoff:
and speed 1/min:	1500	Mech. Abstellung:
Charge press. hPa:	1000	4-4
Supply-pump	4 /0 7 00	1st speed
pressure bar:	0.40/.00	Charge press. hPa: 1000
3rd speed 1/min:		Del. quantity cm3/: 0.003.00
Charge press. hPa:	1000	1000s.: (0.003.00)
Supply-pump	7.00 / /0	Shutoff
pressure bar:	5.804.40	electromagnet volt: -
Overlow quantity at	overflow valve:	Electr. shutoff:
1st speed 1/min:	650	1st speed 1/min: 300
Charge press. hPa:	-	Charge press. hPa: -
Overflow:		Del. quantity cm3/: 0.003.00
quantity cm3/10s:		1000s.: (0.003.00)
2nd speed 1/min:		Shutoff
Charge press. hPa:		electromagnet volt: 12
	55.60139.00	•
quantity cm3/10s:	(40.60154.00)	Idle delivery:
Delivery-quant. and	brooksyny chan	1st speed 1/min: 300
becivery quant. and	Dieakaway Char.	
	Ţ	Del. quantity cm3/: 11.0015.00 1000s.: (8.0018.00)
1nd speed 1/min:	ono I	Dispersion cm3/: 6.0
Charge-air pressure-		1000S.: (6.0)
point hPa:		2nd speed 1/min: 400
LDA-stroke mm:		Del. quantity cm3/: 0.003.00
Del. quantity cm3/:		1000s.: (0.003.00)
	(44.0050.00)	5th speed 1/min: 250
2nd speed 1/min:		Del. quantity cm3/: 17.0029.00
Charge press. hPa:		1000s.: -
Del. quantity cm3/:	0.00. 3.00	19003.
10005	(0.003.00)	Automatic starting fuel delivery:
5th speed 1/min:		nationalite starting fuel delivery.
Charge press. hPa:		1st speed 1/min: 300
Del. quantity cm3/:		Del. quantity cm3/: 60.00100.00
	(18.0026.00)	10005.: (60.00100.00)
9th speed 1/min:		10000 (00.00100.00)
Charge press. hPa:		2nd speed 1/min: 500
Del. quantity cm3/:		Del. quantity cm3/: 20.0050.00
	(52.0058.00)	1000s.: (20.0050.00)
10th speed 1/min:		156501. (20.561.1.50.66)
Charge press. hPa:		4th speed 1/min: 100
Del. quantity cm3/:		Del. quantity cm3/: 20.0070.00
1000s.:	-	1000s.: (20.0070.00)
12th speed 1/min:		.000011 (2010011110100)
Charge press. hPa:		Shutoff electromagnet:
Del. quyntity cm3/:		
	(54.5059.50)	Cut-in
18th speed 1/min:		min voltage : 10.0
Charge press. hPa:		Rated voltage : 12.0
Del. quantity cm3/:		
1000s.:	(32.5037.50)	Mounting and assembly dimensions:
20th speed 1/min:		. g accomacy arms a later
Charge press. hPa:		Designation
- ·	1	K mm· -

KF mm: KOT

MS SVS max.

mm: 1.1...1.5 mm: 7.5 mm: 37.2...39.2 mm: 53.0...61.0 Ya Yb

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : SOF Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/11F1900R521 Type number : 0 460 414 102

Customer Part-No. :

Customer-specific information Customer : IVECO-SOFIM

: 8140.27.2585 "DI" Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 455 344

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 027

Ouernina

Pressure bar: 250.00...253.00

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1400 Charge press. hPa: 1200 Setting value mm: 2.90...3.10

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1400 Speed Charge press hPa: 1200

Setting value bar: 6.60...7.20

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1750 Charge press. hPa: 1200

Del. quantity cm3/ 1000s.: 50.50...51.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5)

Full-load del. w/out charge press.:

1/min: 550 Speed

Del. quantity cm3/ 1000s.: 26.00...27.00

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

1/min: 300

Del. quantity cm3/

1000s.: 8.00...12.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 6.0 1000s.: (6.5)

Full-load speed regulation

1/min: 2100 Speed Charge press hPa: 1200

Del. quantity cm3/

1000s.: 33.00...37.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 40.00...90.00 1000s.: 40.00 mind

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1400 Speed Charge press hPa: 1200

Injqty. cm3/	+ Supply-pump
difference 1000s.: -18.026.0 #	+ pressure bar: 8.709.30
Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Voit: 12
TD-travel dif.measurement	+
correttore anticipo iniezione (SV)	+ Overlow quantity at overflow valve:
1. Speed 1/min: 1400	to over tow qualitately de over from valve.
Charge press hPa: 1200	1st speed 1/min: 800
TD-travel	+ Charge press. hPa: 1200
difference mm: -0.70.9 #	+ Shutoff
Shutoff	+ electromagnet Volt: 12
electromagnet Volt: 12	+ Overflow : 75.00119.50
e teet only tee Pote. Te	quantity cm3/10s: (60.00134.50)
Inspection-pump test specifications	+ 2nd speed 1/min: 1900
Test specifications in parentheses	
rest specifications in parentneses	+ Charge press. hPa: 1200 + Shutoff
Timing-device characteristic:	
iming device character istre:	electromagnet Volt: 12
2nd speed 1/min: 1750	Overflow : 97.30180.70
	+ quantity cm3/10s: (82.30195.70)
Charge press hPa: 1200	T Balinama manda and to also at
TD travel mm: 5.305.90	† Delivery-quant. and breakaway char.:
mm: (4.906.30)	†
Shuteff	†
electromagnet Volt: 12	1 1nd speed 1/min: 800
3rd speed 1/min: 1400	+ Charge-air pressure-setting
Charge press hPa: 1200	point hPa: 600
TD travel mm: 2.903.10	+ Shutoff
mm: (2.303.70)	+ electromagnet Volt: 12
Shutoff	+ Del. quantity cm3/: 45.5046.50
electromagnet Volt: 12	† 1000\$.: (42.0050.00)
4th speed 1/min: 1250	+ 2nd speed 1/min: 2300
Charge press hPa: 1200	+ Charge press. hPa: 1200
TD travel mm: 1.602.20	+ Shutoff
mm: (1.202.60)	+ electromagnet Volt: 12
Shutoff	+ Del. quantity cm3/: 0.003.00
electromagnet Volt: 12	+ 1000S.: (0.003.00)
5th speed 1/min: 1900	+ 5th speed 1/min: 2100
Charge press. hPa: 1200	+ Charge press. hPa: 1200
TD travel mm: 5.30,5.90	+ Shutoff
mm: (4.906.30)	+ electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 33.0037.00
electromagnet Volt: 12	+ 1000s.: (30.5039.50)
	+ 8th speed 1/min: 2000
Supply-pump pressure characteristic:	Charge press. hPa: 1200
	+ Shutoff
1st speed 1/min: 800	+ electromagnet Volt: 12
Charge press. hPa: 1200	+ Del. quantity cm3/: 43.0051.00
Supply-pump	+ 1000S.: (41.0053.00)
pressure bar: 3.80.,.4.40	+ 9th speed 1/min: 1900
Shutoff	Charge press. hPa: 1200
electromagnet Volt: 12	+ Shutoff
2nd speed 1/min: 1400	electromagnet Volt: 12
Charge press. hPa: 1200	Del. quantity cm3/: 48.5053.50
Supply-pump	1000s.: (47.5054.50)
pressure bar: 6.607.20	12th speed 1/min: 1750
Shutoff	
electromagnet Volt: 12	+ Charge press. hPa: 1200 - Shutoff
3rd speed 1/min: 1900	
Charge press. hPa: 1200	+ electromagnet Volt: 12
charge press. Tind. 1200	+ Del. quyntity cm3/: 50.5051.50 + 1000s.: (47.5054.50)
	T (UUID.: U4/, 7074.70)

15th speed 1/min: 1000 Charge press. hPa: 1200	+ Charge press. hPa: 1200 + Injqty. cm3/: 0.0+3.0 ' Z
Shutoff electromagnet Volt: 12	difference 1000s.: - Shutoff
Del. quantity cm3/: 45.0050.00	electromagnet Volt: 12
1000S.: (43.5051.50) 16th speed 1/min: 800	t TD-travel dif.measurement:
Charge press. hPa: -	correttore anticipo iniezione (SV):
Shutoff electromagnet volt: 12	1st speed 1/min: 1400
Del. quantity cm3/: 26.5031.50	+ Charge press. hPa: 1200 + TD-travel : -0.700.90'
1000H.: (25.5032.50)	difference mm: -
18th speed 1/min: 550 Charge press. hPa: -	+ Shutoff + electromagnet Volt: 12
Shutoff	+
electromagnet Volt: 12 Del. quantity cm3/: 26.0027.00	+ SP pressdif.measurement: + pompa di mandata (FP):
10005.: (23.6030.00)	1st speed 1/min: 1400
20th speed 1/min: 800	+ Charge press. hPa: 1200
Charge press. hPa: 1200 Shutoff	+ Supply pump- + pressure : -0.100.30"
electromagnet Volt: 12	difference bar: -
Del. quantity cm3/: 45.5054.50 1000s.: (44.5055.50)	+ Shutoff
10003.: (44.3033.30)	electromagnet Volt: 12
Mech. shutoff:	Automatic starting fuel delivery:
Electr. shutoff:	1st speed 1/min: 200 Shutoff
1st speed 1/min: 300	electromagnet Volt: 12
Del. quantity cm3/: 0.003.00 10005.: (0.003.00)	Del. quantity cm3/: 55.00105.00 1000s.: (55.00105.00)
Shutoff	+
electromagnet volt: -	+ 2nd speed 1/min: 500 - Shutoff
Idle delivery:	electromagnet Volt: 12
1st speed 1/min: 300	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00)
Shutoff	+
electromagnet Volt: 12 Del. quantity cm3/: 8.0012.00	+ 4th speed 1/min: 100 + Shutoff
10005.: (6.0014.00)	electromagnet Volt: 12
Dispersion cm3/: 6.0 1000s.: (6.5)	bel. quantity cm3/: 40.0090.00
2nd speed 1/min: 425	1000s.: (40.0090.00)
Shutoff	Shutoff electromagnet:
electromagnet Volt: 12 Del. quantity cm3/: 0.003.00	‡ Cut-in
1000s.: (0.003.00)	+ min voltage : 10.0
Load-dependent start of delivery:	Rated voltage : 12.0
Inj.—qty.dif.measurement:	† Mounting and assembly dimensions:
1st speed 1/min: 1400	+
Charge press. hPa: 1200	+ Designation + K mm: K1
Injqty. cm3/ : -19.021.0"	+ KF mm: -
difference 1000S.: - Shutoff	+ MS mm: 1.21.6 + Ya mm: 37.939.9
electromagnet Volt: 12	Yb mm: 44.950.1
2nd speed 1/min: 1400	+

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : SOF Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/11F1900R542 Type number : G 460 414 105

Customer Part-No. :

Customer-specific information Customer : IVECC-SOFIM

Engine : 8140.47.2200 "DI"

Power KW: 83 1/min: 1900 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly

Opening

bar: 250.00...253.00 Pressure

Perforated plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mn: 450

Start of delivery Prestroke mm: --(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing device travel

Speed 1/min: 1400 Charge press. hPa: 1000 Setting value mm: 2.40...2.60

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1400 Speed Charge press hPa: 1000

Setting value bar: 6.40...7.00

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1750 Charge press. hPa: 1000

Del. quaritity cm3/ 1000s.: 60.50...61.50

Shutoff

electromagnet Volt: 12 cm3/: 4.0 Dispersion 1000s.: (4.5)

Full-load del. w/out charge press.:

1/min: 550 Speed

Del. quantity cm3/ 1000s.: 23.00...24.00

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 325

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 6.0 1000S.: (6.5)

Full-load speed regulation

1/min: 2100 Charge press hPa: 1000 Del. quantity cm3/

1000s.: 38.00...46.00

electromagnet Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 40.00...90.00

1000s.: 40.00 Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

3rd speed 1/min: 1900 Speed 1/min: 1400 Charge press. hPa: 1000 Charge press hPa: -Supply-pump Inj.-qty. cm3/pressure bar: 8.10...8.70 difference 1000s.: -15.0...-23.0 # Shutoff electromagnet Volt: 12 electromagnet Volt: 12 TD-travel dif.measurement Overlow quantity at overflow valve: correttore anticipo iniezione (SV) 1.Speed 1/min: 1400 1/min: 800 1st speed Charge press. hPa: 1000 Shutoff Charge press hPa: -TD-travel difference mm: -0.8...-1.0 # electromagnet Volt: 12 Shutoff **: 75.00...119.**50 Overflow electromagnet Volt: 12 cm3/10s: (60.00...134.50) quantity 2nd speed 1/min: 1900 Inspection-pump test specifications Charge press. hPa: 1000 Test specifications in parentheses Shutoff electromagnet Volt: 12 Overflow: 97.30...180.70 Timing-device characteristic: cm3/10s: (82.30...195.70) quaritity 1/min: 1600 2nd speed Charge press hPa: 1000 Delivery-quant. and breakaway char.: TD travel mm: 3.50...4.10 mm: (3.10...4.50) Shutoff 1nd speed 1/min: 800 electromagnet Volt: 12 Charge-air pressure-setting 1/min: 1400 3rd speed point hPa: 400 Charge press hPa: 1000 Shutoff mm: 2.40...2.60 electromagnet Volt: 12 Del. quantity cm3/: 48.50...49.50 1000s.: (45.00...53.00) TD travel mm: (1.80...3.20) Shutoff electromagnet Volt: 12 2nd speed 1/min: 2325 4th speed 1/min: 1250 Charge press. hPa: 1000 Charge press hPa: 1000 Shutoff TD travel mm: 1.20...1.80 electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1090s.: (0.00...3.00) 3rd speed 1/min: 2175 mm: (0.80...2.20) Shutoff electromagnet Volt: 12 5th speed 1/min: 1900 Charge press. hPa: 1000 Charge press. hPa: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 25.00...31.00 1000s.: (23.50...32.50) TD travel mm: 4.60...5.20 mm: (4,20,...5,60) Shutoff electromagnet Volt: 12 5th speed 1/min: 2100 Charge press. hPa: 1000 Shutoff Supply-pump pressure characteristic: electromagnet Volt: 12
Del. quantity cm3/: 38.00...46.00
1000S.: (36.00...48.00)
9th speed 1/win: 1900 1st speed 1/min: 800 Charge press. hPa: 1000 Supply-pump bar: 4.20...4.80 pressure Charge press. hPa: 1000 Shutoff Shutoff electromagnet Volt: 12
Del. quantity cm3/: 58.50...63.50
1000s.: (57.50...64.50) electromagnet Volt: 12 1/min: 1400 2nd speed Charge press. hPa: 1000 Supply-pump 12th speed 1/min: 1750 Charge press. hPa: 1000 pressure bar: 6.40...7.00 Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12

Del. quyntity cm3/: 60.5061.50 +	
1000s.: (57.5064.50)	TD-travel dif.measurement:
15th speed 1/min: 1250 +	correttore anticipo iniezione (SV):
Charge press. hPa: 1000	1st speed 1/min: 1400
Shutoff	Charge press. hPa: -
electromagnet Volt: 12	TD-travel : -1.01.8
Del. quantity cm3/: 55.5060.50	difference mm: -
1000s.: (54.0062.00)	Shutoff
16th speed 1/min: 800	electromagnet Volt: 12
Charge press. hPa: 1000	etectionagnet vott. 12
Shutoff	SP pressdif.measurement:
electromagnet volt: 12	pompa di mandata (FP):
Del. quantity cm3/: 54.0063.00	1st speed 1/min: 1400
1000H.: (53.0064.00)	
18th speed 1/min: 550	Charge press, hPa: -
	Supply pump-
Charge press. hPa: -	pressure : -0.10.3
	difference bar: -
electromagnet Volt: 12	Shutoff
Del. quantity cm3/: 23.0024.00	electromagnet Volt: 12
1000s.: (20.0027.00)	
<u>, , , , , , , , , , , , , , , , , , , </u>	Automatic starting fuel delivery:
Mech, shutoff:	
+	1st speed 1/min: 200
Electr. shutoff:	Shutoff
	electromagnet Volt: 12
1st speed 1/min: 325	Del. quantity cm3/: 55.00105.00
Charge press. hPa: -	1000s.: (55.00105.00)
Del. quantity cm3/: 0.003.00	
1000s.: (0.003.00)	2nd speed 1/min: 500
Shutoff	Shutoff
etectromagnet vott: ~ +	electromagnet Volt: 12
electromagnet volt: -	electromagnet Volt: 12 Del. quantity cm3/: 14.0030.00
+	Del. quantity cm3/: 14.0030.00
Idle delivery:	
Idle delivery:	Del. quantity cm3/: 14.0030.00 1000S.: (14.0030.00)
Idle delivery: 1st speed 1/min: 325	Del. quantity cm3/: 14.0030.00 1000S:: (14.0030.00) 4th speed 1/min: 100
Idle delivery: 1st speed 1/min: 325 Shutoff	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000S.: (8.0016.00)	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (8.0016.00) Dispersion cm3/: 6.0	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00)
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000S.: (8.0016.00) Dispersion cm3/: 6.0 1000S.: (6.5)	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (8.0016.00) Dispersion cm3/: 6.0 1000s.: (6.5) 2nd speed 1/min: 450	Del. quantity cm3/: 14.0030.00 1000S.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000S.: (40.0090.00) Shutoff electromagnet:
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000S.: (8.0016.00) Dispersion cm3/: 6.0 1000S.: (6.5) 2nd speed 1/min: 450 Shutoff	Del. quantity cm3/: 14.0030.00 1000S.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000S.: (40.0090.00) Shutoff electromagnet:
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (8.0016.00) Dispersion cm3/: 6.0 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12	Del. quantity cm3/: 14.0030.00 1000S.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000S.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000S.: (8.0016.00) Dispersion cm3/: 6.0 1000S.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00	Del. quantity cm3/: 14.0030.00 1000S.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000S.: (40.0090.00) Shutoff electromagnet:
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (8.0016.00) Dispersion cm3/: 6.0 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12	Del. quantity cm3/: 14.0030.00
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (8.0016.00) Dispersion cm3/: 6.0 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)	Del. quantity cm3/: 14.0030.00 1000S.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000S.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (8.0016.00) Dispersion cm3/: 6.0 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Load-dependent start of delivery:	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions:
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (8.0016.00) Dispersion cm3/: 6.0 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (8.0016.00) Dispersion cm3/: 6.0 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Load-dependent start of delivery: Injqty.dif.measurement:	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: K1 KF mm: K0T
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (8.0016.00) Dispersion cm3/: 6.0 1000s.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1400 Charge press. hPa: -	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000S.: (8.0016.00) Dispersion cm3/: 6.0 1000S.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000S.: (0.003.00) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/: -15.517.5 "	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: K1 KF mm: K0T MS mm: 1.41.6 Ya mm: 33.035.0
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000S.: (8.0016.00) Dispersion cm3/: 6.0 1000S.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000S.: (0.003.00) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/ : -15.517.5 " difference 1000S.: -	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: K1 KF mm: K0T MS mm: 1.41.6 Ya mm: 33.035.0
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: K1 KF mm: K0T MS mm: 1.41.6 Ya mm: 33.035.0
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000S.: (8.0016.00) Dispersion cm3/: 6.0 1000S.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000S.: (0.003.00) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/ : -15.517.5 " difference 1000S.: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1400	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000S.: (8.0016.00) Dispersion cm3/: 6.0 1000S.: (6.5) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000S.: (0.003.00) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1400 Charge press. hPa: - Injqty. cm3/ : -15.517.5 " difference 1000S.: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1400	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K
Idle delivery: 1st speed 1/min: 325 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00	Del. quantity cm3/: 14.0030.00 1000s.: (14.0030.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0090.00 1000s.: (40.0090.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K

change.

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : PEN Edition : 02.94 replaces

Calibrating oil : ISO-4113

: VE4/11F2050L540 Injection pump : 0 460 414 106 Type number

Customer Part-No. :

Customer-specific information Custoner : PENTA

Engine : TAMD 31 P 5424

Power KW: 117 Speed 1/min: 2050

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 110 assembly

Opening |

Pressure bar: 250.00...253.00

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.0 x Wall thickness : 2.0 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500 Charge press. hPa: 1000 Setting value mm: 2.50...2.90

Supply-pump pressure

1/min: 1500 Speed Charge press hPa: 1000

Setting value bar: 6.90...7.50

Full-load del. with charge press.:

Speed 1/min: 1500 Change press. hPa: 1000

De: quantity cm3/

1000s.: 64.00...65.00

Dispersion cm3/: 5.01000s.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 650 Del. quantity cm3/

1000s.: 35.C0...36.00

Low-idle speed regulation

Speed 1/min: 300

Del. quantity cm3/

1000s.: 11.00...15.00

Del. quantity cm3/: 6.0 1000s.: (6.0)

Full-load speed regulation

Speed 1/min: 2150 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 45.00...49.00

Start:

Speed 1/min: 100

Del. quantity cm3/: 20.00...70.00 mind 1000s.: 20.00

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1700 Charge press hPa: 1000

TD travel mm: 3.90...4.70

mm: (3.40...5.20)

1/min: 1500 3rd speed Charge press

hPa: 1000 mm: 2.50...2.90 TD travel

mm: (2.00...7.40) 1/min: 1300

4th speed Charge press hPa: 1000

H20

mm: 0.70...1.50 TD travel Del. quyntity cm3/: 64.00...65.00 1000s.: (62.00...67.00) mm: (0.20...2.00) 1/min: 650 16th speed Supply-pump pressure characteristic: Charge press. hPa: -Del. quantity cm3/: 35.00...36.00 1000H.: (33.00...38.00) 1st speed 1/min: 2050 Charge press. hPa: 1000 Supply-pump Mech. shutoff: bar: 8.70...9.30 pressure Mech. Abstellung: 1/min: 1500 2nd speed Charge press. hPa: 1000 1/min: 2050 1st speed Supply-pump Charge press. hPa: 1000 pressure bar: 6.90...7.50 Del. quantity cm3/: 0.00...3.00 1/min: 750 3rd speed 1000s.: (0.00...3.00) Charge press. hPa: 1000 Shutoff Supply-pump electromagnet volt: bar: 4.20...4.80 pressure Electr. shutoff: Overlow quantity at overflow valve: 1st speed 1/min: 300 1st speed 1/min: 650 Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Charge press. hPa: -: 41.70...83.40 Overflow quantity cm3/10s: (26.70...98.40) Shutoff 2nd speed 1/min: 2050 electromagnet volt: 12 Charge press. hPa: 1000 Overflow : 55.60...139.00 Idle delivery: cm3/10s: (40.60...154.00) quantity 1st speed 1/min: 300 Del. quantity cm3/: 11.00...15.00 Delivery-quant. and breakaway char.: 1000s.: (8.00...18.00) cm3/: 6.0 Dispersion 1nd speed 1/min: 900 1000s.: (6.0) Charge-air pressure-setting 2nd speed 1/min: 400 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 5th speed 1/min: 250 Del. quantity cm3/: 20.00...40.00 1000s.: ~ hPa: 400 Automatic starting fuel delivery: Charge press. hPa: 1000 1st speed 1/min: 300 Del. quantity cm3/: 15.00...39.00 1000s.: -Del. quantity cm3/: 60.00...100.00 1000s.: (60.00...100.00) 1/min: 2150 5th speed Charge press. hPa: 1000 2nd speed 1/min: 500 Del. quantity_cm3/: 20.00...50.00 Charge press. nPa: 1000
Del. quantity cm3/: 45.00...49.00
1000S.: (41.00...53.00)
9th speed 1/min: 2050
Charge press. hPa: 1000
Del. quantity cm3/: 55.00...60.00
1000S.: (54.50...60.50)
10th speed 1/min: 750 1000s.: (20.00...50.00) 4th speed 1/min: 100 Del. quantity cm3/: 20.00...70.00 1000s.: (20.00...70.00) Charge press. hPa: 1000 Shutoff electromagnet: Del. quantity cm3/: 66.50...71.50 1000s.: (64.00...74.00) Cut-in 1/min: 1500 12th speed min voltage : 10.0 Charge press. hPa: 1000 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K	mm: 3.23.4
KF	mm: KOT
MS	mm: 1.11.5
Ya	mm: 37.239.2
Yb	mm: 48.556.5

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : CUM Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/12F125CR359 Type number : 0 460 424 054 Customer Part-No.: 3 919 403

Customer-specific information

Customer : CDC

Engine : 4 BTA **AUTO**

TEST BENCH REQUIREMENTS

Calibrating-oil •c return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly

Opening |

Pressure bar: 250.00...253.00

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Start of delivery block Piston stroke mm: 1.25

mm: +-0.02(0.06)

Outlet

Injection-pump setting values Test specifications in parentheses

Timing device travel

Speed 1/min: 1100 Charge press. hPa: 1000

Setting value mm: 2.00...2.40

AFB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1100 Charge press hPa: 1000

Setting value bar: 5.30...5.90

KSB/AFB

valve Volt: 12 Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 850 Speed Charge press. hPa: 1000

Del. quaritity cm3/ 1000s.: 83.00...84.00

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

1000s.: 53.00...54.00

11

KSB/AFB valve Volt: 12

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 375 Del. quantity cm3/ 1000s.: 10.00...12.00

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 5.5 1000s.: (7.0)

Full-load speed regulation

Speed 1/min: 1330 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 68.00...74.00

KSB/AFB

valve Volt: 12

H23

Shutoff		+	Shutoff	
electromagnet Volt:	12	1	electromagnet Volt:	12
-		+	2nd speed 1/min:	1000
Start:		+	Charge press. hPa:	1000
		+	Supply-pump	
Speed 1/min:	100	+	pressure bar:	4.90 5.50
Del. quantity cm3/:	80.00140.00	+	KSB/AFB	
mind 1000s.:	80.00	+	valve Volt:	12
KSB/AFB		ł	Shutoff	
Valve Volt:	12	+	electromagnet Volt:	12
Shutoff	• •	+	3rd speed 1/min:	1100
electromagnet Volt:	12	+		1000
		+	Supply-pump	
Inspection pump tes		†		5.305.90
Test specifications	in parentheses	+	KSB/AFB	4.5
		+	valve Volt:	12
Timing-device chara	cteristic:	+	Shutoff	4.5
Continue of Adults	4250	+	electromagnet Volt:	12
2nd speed 1/min:		†	4th speed 1/min:	1250
Charge press hPa:	1000	†		1000
	2.803.60	†	Supply-pump	· • • • • • • • • • • • • • • • • • • •
	(2.503.90)	†	• • • • • • •	6.006.60
KSB/AFB	13	†	KSB/AFB	43
valve Volt:	12	†	valve Volt:	12
Shutoff	43	+	Shutoff	40
electromagnet Volt:	1400	†	electromagnet Volt:	12
3rd speed 1/min:		†	0	#1 - 1
Charge press hPa:	1000	†	Overlow quantity at	overtiow valve:
	2.002.40	†	4.4	<i>Th</i> 0
	(1.502.90)	†	1st speed 1/min:	
KSB/AFB	42	†	Charge press. hPa:	-
valve Volt:	12	†	KSB/AFB	42
Shutoff	13	†	valve Volt:	12
electromagnet Volt:	1000	†	Shutoff	40
4th speed 1/min:		†	electromagnet Volt:	
Charge press hPa:	1000 0.901.70	†		41.7083.40
		†	quantity cm3/10s:	
	(0.602.00)	†	2nd speed 1/min:	
KSB/AFB valve Volt:	12	†		1000
valve Volt: Shutoff	12	†	KSB/AFB	42
electromagnet Volt:	10	†	valve Volt:	14
8th speed 1/min:	700+	T	Shutoff	12
Charge press. hPa:		T	electromagnet Volt:	
To travel mm:	2.903.90	Ť		55.60139.00
mm:		T	quantity cm3/10s:	(40.00154.00.
KSB/AFB	_	T	Dolfvism woods - and	Immonlancina olama
valve Volt:	_	Ť	Delivery-quant. and	oreakaway char.
Shutoff	_	T		
electromagnet Volt:	12	T	1nd speed 1/min:	700
etectrollagnet vott.	12	Ť		
Supply-pump pressure	a characteristic:	T	Charge-air pressure point hPa:	-secting
anthry half hi essair	e character istit.	Ť		
1st speed 1/min:	500	T		6.4
	1000	T	KSB/AFB	12
	1000	T	valve Volt:	16
Supply-pump bar:	2 60 7 20	T	Shutoff	12
	2.603.20	†	electromagnet Volt:	
KSB/AFB	10	†	Del. quantity cm3/:	
valve Volt:	16	†		(68.0076.00)
		+	2nd speed 1/min:	1200

Charge press. hPa: KSB/AFB	1600	+ Shutoff ,
valve Volt:	12	+ electromagnet Volt: 12 + Del. quantity cm3/: 94.00103.0
Shutoff	12	1000s.: -
electromagnet Volt:		†
Del. quantity cm3/:		+ Mech. shutoff:
	(0.003.00)	+ Mech. Abstellung:
3rd speed 1/min:	1430	+
Charge press. hPa: KSB/AFB	1000	1st speed 1/min: 1250 Charge press. hPa: 1000
valve Volt:	12	+ Del. quantity cm3/: 0.003.00
Shutoff		1000s.: (0.003.00)
electromagnet Volt:	12	+ Shutoff
Del. quantity cm3/:	15.0045.00	+ electromagnet volt: 12
1000s.:	(15.0045.00)	+ KSB/AFB
5th speed 1/min:	1330	+ valve Volt: 12
Charge press. hPa:		1
KSB/AFB	1000	T Clarky shoulder
	40	+ Electr. shutoff:
valve Volt:	12	†
Shutoff		+ 1st speed 1/min: 375
<pre>electromagnet Volt:</pre>	12	+ Del. quantity cm3/: 0.003.00
Del. quantity cm3/:	68.0074.00	+ 1000S.: (0.003.00)
	(65.0077.00)	+ Shutoff
9th speed 1/min:		***************************************
		+ electromagnet volt: -
Charge press. hPa:	1000	+ KSB/AFB
KSB/AFB		+ valve Volt: 12
valve Volt:	12	+
Shutoff		+ Idle delivery:
electromagnet Volt:	12	
Del. quantity cm3/:	76 50 79 50	1st speed 1/min: 375
10000	(75.0081.00)	KSB/AFB
10th speed 1/min:		
		+ valve Volt: 12
Charge press. hPa:	1000	+ Shutoff
KSB/AFB		+ electromagnet Volt: 12
valve Volt:	12	+ Del. quantity cm3/: 10.0012.00
Shutoff		1000S.: (6.0016.00)
electromagnet Volt:	12	+ Dispersion cm3/: 5.5
Del. quantity cm3/:		100GS.: (7.0)
	(75.5082.50)	
12th speed 1/min:	0EU	2nd speed 1/min: 450
		+ KSB/AFB
Charge press. hPa:	1000	+ valve Volt: 12
KSB/AFB		† Shutoff
valve Volt:	12	+ electromagnet Volt: 12
Shutoff		+ Del. quantity cm3/: 0.002.00
electromagnet Volt:	12	+ 1000S.: (0.002.00)
Del. quyntity cm3/:		1
	(80.5086.50)	Automatic starting fuel delivery:
18th speed 1/min:		T Advandance staining fuel delivery:
		T 4-4 4/1: 470
Charge press. hPa:	-	1st speed 1/min: 130
KSB/AFB		+ KSB/AFB
valve Volt:	12	+ valve Volt: 12
Shutoff		+ Shutoff
electromagnet Volt:	12	+ electromagnet Volt: 12
Del. quantity cm3/:	53.0054.00	Del. quantity cm3/: 80.00140.00
	(49.5057.50)	10005.: (80.00140.00)
20th speed 1/min:		10003 (00.00140.00)
		7 2-4 4/4: 252
Charge press. hPa:	1000	+ 2nd speed 1/min: 250
KSB/AFB		+ KSB/AFB
valve Volt:	12	+ valve Volt: 12
		+

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 20.00...40.00 1000s.: (20.00...40.00)

4th speed 1/min: 100

KSB/AFB

Volt: 12 valve

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 80.00...140.00 1000s.: (80.00...140.00)

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.6...3.8 KF mm: KOT

mm: 1.2...1.5 mm: 2.3 MS1

SVS max. LDA stroke mm: 6.4

mm: 34.8...38.8 mm: 40.3...45.7 Ya Yb

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

* Unscrew KSB ball valve 2 mm

Note inst. in remarks column

Test scheet : CUM : 02.94 Edition replaces

Calibrating oil : ISO-4113

: VE4/12F1250R359-1 Injection pump : 0 460 424 055 Type number

Customer Part-No.: 3 919 401

Customer-specific information

Customer : CDC

Engine : 4 BTA **AUTO**

Power KW: 77 Speed 1/min: 1250

TEST BENCH REQUIREMENTS

Calibrating oil return temo.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly

Opening

Pressure bar: 250.00...253.00

Perforated-plate

mm: 0.5 diameter

Test ini. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery Prestroke mm: -(from BDC): -

Start of delivery block Piston stroke mm: 1.00

mn: +-0.02(0.06)

Outlet

Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 1100 Speed Charge press. hPa: 1000

mm: 1.90...2.30 Setting value

AFB/AFB

Volt: 12 valve

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1100 Speed Charge press hPa: 1000

Setting value bar: 5.40...6.00

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 850 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 73.00...74.00

KSB/AFB

Volt: 12 valve

Shutoff

electromagnet Volt: 12 cm3/: 4.0Dispersion 1000s.: (4.5)

Full-load del. w/out charge press.:

1/min: 500 Speed

Del. quantity cm3/

1000s.: 43.50...44.50

11

KSB/AFB

Volt: 12 valve

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

1/min: 350 Speed

Del. quantity cm3/ 1000s.: 7.50...11.50

KSB/AFB

Volt: 12 valve

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 5.5 1000s.: (7.0)

Full-load speed regulation

1/min: 1340 Speed Charge press hPa: 1000

Del. quantity cm3/		+	Supply-pump	
1000s.:	54.0060.00	1		: 2.703.30
KSB/AFB		1	KSB/AFB	
valve Volt:	12	1	valve Volt	• 12
Shutoff	16.	I	Shutoff	. 12
	10	T		- 42
electromagnet Volt:	12	†	electromagnet Volt	
04		†	2nd speed 1/min	
Start:		+	Charge press. hPa	: 1000
		+	SripbfA-brumb	
Speed 1/min:	100	+	pressure bar	: 4.405.00
Del. quantity cm3/:	80.00140.00	4.	KSB/AFB	
mind 1000s.:	80.00	1	valve Volt	• 12
KSB/AFB		1	Shutoff	
Valve Volt:	12	1	electromagnet Volt	. 12
Shutoff	12	T		
	10	†	3rd speed 1/min	
electromagnet Volt:	12	†	Charge press. hPa	: 1000
		+	Supply-pump	
Inspection pump test	: specifications	+	pressure bar	: 5.406.00
Test specifications	in parentheses	+	KSB/AFB	
	,	+	valve Volt	: 12
Timing-device charac	teristic:	1	Shutoff	
Thining device the be			electromagnet Volt	. 13
2nd speed 1/min:	1250	T		
		T	4th speed 1/min	
Charge press hPa:		†	Charge press. hPa	: 1000
	2.903.70	+	Supply-pump	
	(2.604.00)	+	pressure bar	: 6.006.60
KSB/AFB		+	KSB/AFB	
valve Volt:	12	+	valve Volt	: 12
Shutoff		1	Shutoff	• • •
electromagnet Volt:	12	1	electromagnet Volt	. 12
3rd speed 1/min:		T	etectionagnet vott	. 12
		T	0	
Charge press hPa:		†	Overlow quantity a	t overtiow valve:
TD travel mm:	1.902.30	†		
	(1.402.80)	+	1st speed 1/min	: 500
KSB/AFB		+	Charge press. hPa	6 ests 6
valve Volt:	12	+	KSB/AFB	
Shutoff		+	valve Volt	: 12
electromagnet Volt:	12	1	Shutoff	
4th speed 1/min:		1	electromagnet Volt	• 12
Charge press hPa:		T	Overflow	41.7083.40
	0.601.55	T	guarantity an7/10a	(24 70 09 (0)
		T	quantity cm3/10s	
	(0.401.80)	†	2nd speed 1/min	
KSB/AFB	10	†	Charge press. hPa	: 1000
valve Volt:	12	+	KSB/AFB	
Shutoff		+	valve Volt	: 12
electromagnet Volt:	12	+	Shutoff .	
8th speed 1/min:	400*	+	electromagnet Volt	12
Charge press. hPa:		1	Overflow	
	2.703.70	1	quantity cm3/10s	(//0 //0 15/ 00)
mn:		I	quarterly clip/105	. (40.001)4.007
KSB/AFB		T	Dald, am., m.,	A law at the second second
		†	Delivery-quant. and	breakaway char.:
valve Volt:	-	†		
Shutoff		+		
electromagnet Volt:	12	+	1nd speed 1/min	: 700
		+	Charge-air pressure	
Supply-pump pressure	characteristic:	+	point hPa	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	meed of the state	1	LDA-stroke mm	
1st speed 1/min:	500	T	KSB/AFB	. 0.7
Charge press. hPa:		T.		. 12
charge press. IIId:	1000	T	valve Volt	14
		+		

Shutoff	+	Shutoff
electromagnet Volt:	12	electromagnet volt: 12
Del. quantity cm3/:	70 50 71 50	KSB/AFB
1000c .	(47.00 75.00)	
	(67.0075.00)	valve Volt: 12
2nd speed 1/min:		
Charge press. hPa:	1000 +	Electr. shutoff:
KSB/AFB	1	
valve Volt:	12	1st speed 1/min: 350
	16	
Shutoff	+	Del. quantity cm3/: 0.003.00
electromagnet Volt:		1000s.: (0.003.00)
Del. quantity cm3/:	0.003.06	Shutoff
	(0.003.00)	electromagnet volt: -
3rd speed 1/min:		KSB/AFB
Charge press. hPa:	1000	valve Volt: 12
KSB/AFB	+	
valve Volt:	12	Idle delivery:
Shutoff	1	
electromagnet Volt:	12	1st speed 1/min: 350
Del manditu and	15 00 /5 00 T	
Del. quantity cm3/:	15.0045.00	KSB/AFB
	(15.0045.00)	valve Volt: 12
5th speed 1/min:	1340	Shutoff
Charge press. hPa:		electromagnet Volt: 12
KSB/AFB	.005	
	42 T	Del. quantity cm3/: 7.5011.50
valve Volt:	16	1000s.: (4.5014.50)
Shutoff	+	Dispersion cm3/: 5.5
<pre>electromagnet Volt:</pre>	12 +	1000s.: (7.0)
Del. quantity cm3/:	54.0060.00	2nd speed 1/min: 400
10005	(51.00 63.00)	KSB/AFB
9th speed 1/min:	1250	
	1000	valve Volt: 12
Charge press. hPa:	1000	Shutoff
KSB/AFB	+	electromagnet Volt: 12
valve Volt:	12 +	Del. quantity cm3/: 0.006.00
Shutoff	1	10005.: (0.006.00)
electromagnet Volt:	12	1000011 (0.001.10100)
	60 50 70 50	Automobile service Contration
Del. quantity cm3/:	69.5070.50	Automatic starting fuel delivery:
Del. quantity cm3/: 1000s.:	69.5070.50 (67.0073.00)	
Del. quantity cm3/:	69.5070.50 (67.0073.00)	
Del. quantity cm3/: 1000s.: 12th speed 1/min:	850	1st speed 1/min: 150
Del. quantity cm3/: 1000s.: 12th speed 1/min: Charge press. hPa:	850	1st speed 1/min: 150 KSB/AFB
Del. quantity cm3/: 1000s.: 12th speed 1/min: Charge press. hPa: KSB/AFB	250 1000	1st speed 1/min: 150 KSB/AFB valve Volt: 12
Del. quantity cm3/: 1000s.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt:	250 1000	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff	12	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt:	250 1000 12	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/:	250 1000 12 12 73.0074.00	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/:	250 1000 12 12 73.0074.00	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.:	850 1000 12 12 73.0074.00 (70.5076.50)	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000s.: -
Del. quantity cm3/: 1000s.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000s.: 18th speed 1/min:	250 1000 12 12 73.0074.00 (70.5076.50) 500	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa:	250 1000 12 12 73.0074.00 (70.5076.50) 500	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000s.: - 2nd speed 1/min: 280 KSB/AFB
Del. quantity cm3/: 1000s.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000s.: 18th speed 1/min: Charge press. hPa: KSB/AFB	850 1000 12 12 73.0074.00 (70.5076.50) 500	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa:	850 1000 12 12 73.0074.00 (70.5076.50) 500	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000s.: - 2nd speed 1/min: 280 KSB/AFB
Del. quantity cm3/: 1000s.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000s.: 18th speed 1/min: Charge press. hPa: KSB/AFB	850 1000 12 12 73.0074.00 (70.5076.50) 500	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff	850 1000 12 12 73.0074.00 (70.5076.50) 500	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt:	850 1000 12 12 73.0074.00 (70.5076.50) 500	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/:	850 1000 12 12 73.0074.00 (70.5076.50) 500 12 12 43.5044.50	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/:	850 1000 12 12 73.0074.00 (70.5076.50) 500	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000s.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000s.: -
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.:	850 1000 12 12 73.0074.00 (70.5076.50) 500 12 12 43.5044.50	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000s.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000s.: - 4th speed 1/min: 100
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/:	850 1000 12 12 73.0074.00 (70.5076.50) 500 12 12 43.5044.50	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000s.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000s.: - 4th speed 1/min: 100
Del. quantity cm3/: 1000s.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000s.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: Mech. shutoff:	850 1000 12 12 73.0074.00 (70.5076.50) 500 12 12 43.5044.50	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 4th speed 1/min: 100 KSB/AFB
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.:	850 1000 12 12 73.0074.00 (70.5076.50) 500 12 12 43.5044.50	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 4th speed 1/min: 100 KSB/AFB valve Volt: 12
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: Mech. shutoff: Mech. Abstellung:	850 1000 12 12 73.0074.00 (70.5076.50) 500 - 12 12 43.5044.50 (40.0048.00)	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 4th speed 1/min: 100 KSB/AFB valve Volt: 12 Shutoff
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: Mech. shutoff: Mech. Abstellung: 1st speed 1/min:	850 1000 12 12 73.0074.00 (70.5076.50) 500 - 12 12 43.5044.50 (40.0048.00)	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 4th speed 1/min: 100 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: Mech. shutoff: Mech. Abstellung: 1st speed 1/min: Charge press. hPa:	850 1000 12 12 73.0074.00 (70.5076.50) 500 - 12 12 43.5044.50 (40.0048.00)	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 4th speed 1/min: 100 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 90.00
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: Mech. shutoff: Mech. Abstellung: 1st speed 1/min: Charge press. hPa: Del. quantity cm3/:	850 1000 12 12 73.0074.00 (70.5076.50) 500 - 12 12 43.5044.50 (40.0048.00)	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 4th speed 1/min: 100 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 1000S.: 12th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quyntity cm3/: 1000S.: 18th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: Mech. shutoff: Mech. Abstellung: 1st speed 1/min: Charge press. hPa: Del. quantity cm3/:	850 1000 12 12 73.0074.00 (70.5076.50) 500 - 12 12 43.5044.50 (40.0048.00)	1st speed 1/min: 150 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 2nd speed 1/min: 280 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 80.00 1000S.: - 4th speed 1/min: 100 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 90.00

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

mm: 3.6...3.8 KF mm: KOT MS1 mm: 1.6...1.9 SVS max. mm: 2.4 LDA stroke mm: 6.4 mm: 34.8...38.8 Ya

mm: 40.9...45.3 Yb

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

* Unscrew KSB ball valve 2 mm

Note inst. in remarks column

Test scheet : MAN : 03.94 Edition Calibrating oil : ISO-4113

: VE4/12F1300R558 Injection pump Type number : 0 450 424 100

Customer Part No. :

Customer-specific information Customer : PERKINS

Engine : Phaser 135 TI "DI"

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 027

Openina |

bar: 250.00...253.00 Pressure

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 900 Speed Charge press. hPa: 1500

Setting value mm: 1.60...1.80

Shutoff

electromagnet Volt: 24

Supply-pump pressure

1/min: 900 Speed Charge press hPa: 1500 Setting value bar: 6.30...6.90

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

1/min: 1000 Speed Charge press. hPa: 1500 Del. quantity cm3/ 1000s.: 90.50...91.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 4.0 1000s.: (4.0)

Full-load del. w/out charge press.:

1/min: 500 Speed Del. quantity cm3/

1000s.: 60.50...61.50

Shutoff

electromagnet Volt: 24

Low-idle speed regulation

1/min: 300 Speed Del. quantity cm3/

1000s.: 8.00...12.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 5.0 1000s.: (5.0)

Full-load speed regulation

Speed 1/min: 1450 Charge press hPa: 1500

Del. quantity cm3/

1000s.: 65.00...69.00

Shutoff

electromagnet Volt: 24

Start:

1/min: 100 Speed

Del. quantity cm3/: 100.00...160.00

mind 1000s.: 100.0

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1000 Charge press

hPa: 1500 mm: 2.50...3.10 TD travel

mm: (2.10...3.50)

J03

Shutoff -	+ 1nd speed 1/min: 700
electromagnet Volt: 24	Charge-air pressure-setting
3rd speed 1/min: 900	point hPa: 650
Charge press hPa: 1500	Shutoff
TD travel mm: 1.601.80	electromagnet Volt: 24
mm: (1.202.20)	Del. quantity cm3/: 79.0080.00
Shutoff -	1000\$.: (76.5082.50)
electromagnet Volt: 24	2nd speed 1/min: 1600
4th speed 1/min: 800 -	Charge press. hPa: 1500
Charge press hPa: 1500 -	Shutoff
TD travel mm: 0.401.00 -	electromagnet Volt: 24
mi: (0.101.30)	Del. quantity cm3/: 0.003.00
Shutoff -	1000\$.: (0.003.00)
electromagnet Volt: 24	3rd speed 1/min: 1500
5th speed 1/min: 1300 -	Charge press. hPa: 1500
Charge press. hPa: 1500	Shutoff
TD travel mm: 3.003.60 -	electromagnet Volt: 24
mm: (2.604.00) - Shutoff	Del. quantity cm3/: 27.0043.00
	1000\$.: (25.0045.00)
electromagnet Volt: 24	5th speed 1/min: 1450
Cipalitanian pagaine abandarianiatica	Charge press. hPa: 1500
Supply-pump pressure characteristic:	Shutoff
1st speed	electromagnet Volt: 24
Charge press. hPa: 1500	Del. quantity cm3/: 65.0069.00
Supply-pump -	1000s.: (61.0073.00)
pressure bar: 8.008.60	9th speed 1/min: 1300
Shutoff	+ Charge press. hPa: 1500 + Shutoff
electromagnet Volt: 24	
2nd speed 1/min: 900	electromagnet Volt: 24
Charge press. hPa: 1500	Del. quantity cm3/: 100.00104.00 1000S.: (98.50105.50)
Supply-pump	12th speed 1/min: 1000
pressure bar: 6.306.90	Charge press. hPa: 1500
Shutoff -	Shutoff
electromagnet Volt: 24	electromagnet Volt: 24
3rd speed 1/min: 500	Del. quyntity cm3/: 90.5091.50
Charge press. hPa: 1500	10005: (88.0094.00)
Supply-pump	16th speed 1/min: 700
pressure bar: 4.505.10	Charge press. hPa: -
Shutoff	Shutoff
electromagnet Volt: 24	electromagnet volt: 24
	Del. quantity cm3/: 57.0062.00
Overlow quantity at overflow valve:	1000H.: (56.0063.00)
	18th speed 1/min: 500
1st speed 1/min: 700	Charge press. hPa: -
Charge press. hPa: 1500	Shutoff
Shutoff	electromagnet Volt: 24
electromagnet Volt: 24	Del. quantity cm3/: 60.5061.50
Overflow : 41.7086.10 -	1000s.: (58.0064.00)
quantity cm3/10s: (26.70101.10)	20th speed 1/min: 700
2nd speed 1/min: 1300	- Charge press. hPa: 1500
Charge press. hPa: 1500	- Shutoff
Shutoff	electromagnet Volt: 24
electromagnet Volt: 24	Pel. quantity cm3/: 88.0092.00
Overflow : 55.60139.00	1000s.: (86.5093.50)
quantity cm3/10s: (40.60154.00)	
	Mech. shutoff:
Delivery-quant. and breakaway char.:	Mech. Abstellung:
	<u> </u>
	- 1st speed 1/min: 1300

Charge press. hPa: 1500 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: 24 Electr. shutoff: 1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1/min: 300 1st speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 8.00...12.00 1000s.: (5.00...15.00) cm3/: 5.0 Dispersion 1000s.: (5.0) 1/min: 400 2nd speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 130 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 100.00...160.00 1000s.: (100.00...160.00) 2nd speed 1/min: 250 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 35.00...75.00 1000s.: (35.00...75.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 100.00...160.00 1000s.: (100.00...160.00) Shutoff electromagnet: Cut-in min voltage : 20.0 Rated voltage : 24.0 Mounting and assembly dimensions: Designation

mm: 3.6...3.8

mm: KOT

MS1 mm: 1.0...1.4 Ya mm: 31.5...33.5 Yb mm: 52.9...61.5

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

J05

KF

Note inst. in remarks column

Test scheet : CUM Edition : 02.94 : 11.86 replaces Calibrating oil : ISO-4113

Injection pump : VE5/12F14COR232 Type number : 0 460 426 077

Customer Part-No. :

Customer-specific information

Customer

Engine : 6 BT-5.9 AUTO

KW: 118 Power 1/min: 1400 Speed

TEST BENCH REQUIREMENTS

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 027

Openina |

bar: 250.00...253.00 Pressure

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery

Prestroke mm: 0.3

(from BDC): +-0.02(0.04)

Start of delivery block Piston stroke mm: 1.1

mm: +-0.02(0.06)

Outlet

Injection-pump setting values

Test specifications in parentheses

Timing-device travel

1/min: 900 Charge press. hPa: 1000

Setting value mm: 4.20...4.60

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 900 Speed Charge press hPa: 1000

Setting value bar: 4.10...4.70

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 900 Speed Charge press. hPa: 1000

Dei. quantity cm3/

1000s.: 67.00...68.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5)

Full-load del. w/out charge press.:

1/min: 500

Del. quantity cm3/

1000s.: 30.50...31.50

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 360

Del. quantity cm3/

1000s.: 8.00...14.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 5.5 1000s.: (7.0)

Full-load speed regulation

Speed 1/min: 1530 Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 49.00...55.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 45.00...105.00

1000s.: 45.00

J06

Shutott	+ Overflow : 55.60139.00
electromagnet Volt: 12	+ quantity cm3/10s: (40.60154.00)
Inspection-pump test specifications Test specifications in parentheses	Delivery-quant. and breakaway char.
Timing-device characteristic:	+ 1nd speed 1/min: 700
	+ Charge-air pressure-setting
2nd speed 1/min: 1100	+ point hPa: 500
Charge press hPa: 1000	+ LDA-stroke mm: 6.7
TD travel mm: 5.506.30	+ Shutoff
mm: (5.206.60)	+ electromagnet Volt: 12
Shutoff	+ Del. quantity cm3/: 58.5059.50
electromagnet Volt: 12	1000s.: (55.0063.00)
3rd speed 1/min: 900	+ 2nd speed 1/min: 1700
Charge press hPa: 1000	Charge press. hPa: 1000
TD travel mm: 4.204.60	+ Shutoff
mm: (3.705.10)	electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 0.003.00
electromagnet Volt: 12	10005:: (0.003.00)
4th speed 1/min: 500	4th speed 1/min: 1620
Charge press hPa: 1000	Charge press. hPa: 1000
TD travel mm: 0.401.20	Shutoff
mm: (0.101.50)	
Shutoff	+ electromagnet Volt: 12
	+ Del. quantity cm3/: 15.0055.00
electromagnet Volt: 12	† 1000s.: (15.0055.00)
Complex many many many all the second of the	+ 5th speed 1/min: 1530
Supply-pump pressure characteristic:	+ Charge press. hPa: 1000
0 1 4 4 5 700	+ Shutoff
2nd speed 1/min: 500	+ electromagnet Volt: 12
Charge press. hPa: 1000	+ Del. quantity cm3/: 49.0055.00
Supply-pump	1000s.: (46.0058.00)
pressure bar: 2.403.00	+ 9th speed 1/min: 1400
Shutoff	+ Charge press. hPa: 1000
electromagnet Volt: 12	+ Shutoff
3rd speed 1/min: 900	+ electromagnet Volt: 12
Charge press. hPa: 1000	+ Del. quantity cm3/: 61.5064.50
Supply-pump	+ 1000s.: (60.0066.00)
pressure bar: 4.104.70	+ 10th speed 1/min: 1100
Shutoff	Charge press. hPa: 1000
electromagnet Volt: 12	+ Shutoff
4th speed 1/min: 1400	electromagnet Volt: 12
Charge press. hPa: 1000	Del. quantity cm3/: 64.5067.50
Supply-pump	10005.: (62.5069.50)
pressure bar: 6.106.70	12th speed 1/min: 900
Shutoff	- Charge press. hPa: 1000
electromagnet Volt: 12	+ Shutoff
a top of an agric batti 12	electromagnet Volt: 12
Overlow quantity at overflow valve:	
over tow quarterly at over tow valve.	bel. quyntity cm3/: 67.0068.00
1st speed 1/min: 500	10005.: (64.5070.50)
	18th speed 1/min: 500
Charge press. hPa: - Shutoff	t Charge press. hPa: -
	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
Overflow : 41.7083.40	+ Del. quantity cm3/: 30.5031.50
quantity cm3/10s: (26.7098.40)	1000s.: (27.0035.00)
2nd speed 1/min: 1400	+ 20th speed 1/min: 500
Charge press. hPa: 1000	Charge press. hPa: 1000
Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12

Del. quantity cm3/: 64.50...72.50 1000s.: -Mech. shutoff: Mech. Abstellung: 1st speed 1/min: 1400 Charge press. hPa: 1000 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: 12 Electr. shutoff: 1st speed 1/min: 360 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1/min: 360 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 8.00...14.00 1000s.: (6.00...16.00) cm3/: 5.5 1000s.: (7.0) Dispersion 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...4.00 1000s.: (0.00...4.00) Automatic starting fuel delivery: 1/min: 300 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 55.00...115.00 1000s.: (55.00...115.00) 2nd speed 1/min: 480 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 15.00...55.00 1000s.: (15.00...55.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 45.00...105.00 1000s.: (45.00...105.00) Shutoff electromagnet:

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

LDA stroke mm: 6.7

Ya mm: 35.8...37.8 Yb mm: 40.2...45.6

Remarks:

: C.D.C. # 390 8197

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between V3 flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Cut-in

min voltage : 10.0

Note inst. in remarks column

Test scheet : NIS

Edition : 20.09.93 : 18.01.89 replaces Calibrating oil : ISO-4113

Injection pump : VE6/12F1430R325

Type number : 0 460 426 117

Customer Part-No. :

Customer-specific information

Customer : NISSAN

Engine : M 36 TC 125KW

TEST BENCH REQUIREMENTS

Calibrating-oil

return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 109 assembly

Opening |

bar: 207.00...210.00 Pressure

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00

x Wall thickness : 2.00

mm: 840 x Length

Start of delivery

Prestroke mm: -

(from BDC): -

Injection-pump setting values

Test specifications in parentheses

Timing-device travel

Speed 1/min: 1100

Charge press. hPa: 1000

mm: 2.10...2.50 Setting value

electromagnet Volt: 24

Supply-pump pressure

1/min: 1100

Charge press hPa: 1000

Setting value bar: 6.60...7.20

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

1/min: 800 Speed

Charge press. hPa: 1000

Del. quantity cm3/ 1000s.: 96.00...97.00

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 5.0

1000s.: (5.0)

Full-load del. w/out charge press.:

1/min: 500

Del. quantity cm3/

1000s.: 68.50...69.50

Shutoff

electromagnet Volt: 24

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

1000s.: 16.50...20.50

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 5.0 1000s.: (5.0)

Full-load speed regulation

1/min: 1600 Speed

Charge press hPa: 1000

Del. quantity cm3/

1000s.: 34.00...40.00

Shutoff

electromagnet Volt: 24

Start:

Speed 1/min: 100 Del. quantity cm3/: 100.00...150.00

mind 1000s.: 100.0

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications

Test specifications in parentheses

Timing-device characteristic:

	1000	‡	Shutoff	7.2
mm:	2.10 2.50 (1.603.00)	‡	electromagnet Volt: Del. quantity cm3/:	81.0082.00
Shutoff		+		(78.5084.50)
electromagnet Volt:		+	2nd speed 1/min:	1700
4th speed 1/min:	900	+	Charge press. hPa:	1000
Charge press hPa:	1000	+	Shutoff	
	0.701.50	1	electromagnet Volt:	24
	(0.401.80)	1	Del. quantity cm3/:	
Shutoff		1	10000	(0.003.00)
electromagnet Volt:	2/.	I	5th speed 1/min:	
5th speed 1/min:		T		
		Ť	Charge press. hPa:	1000
	1000	†	Shutoff	
	3.704.50	+	electromagnet Volt:	
	(3.404.80)	+	Del. quantity cm3/:	
Shutoff		+		(31.0043.00)
electromagnet Volt:	24	+	9th speed 1/min:	1400
_		1	Charge press. hPa:	
Supply-pump pressure	e characteristic:	1	Shutoff	. 455
action of bench to account			electromagnet Volt:	2/
1st speed 1/min:	1400	1	Del. quantity cm3/:	
Charge press. hPa:		T		
	1000	T		(82.0088.00)
Supply-pump	3.00 0.00	†	10th speed 1/min:	
	7.908.50	†	Charge press. hPa:	1000
Shutoff		+	Shutoff	
electromagnet Volt:		+	electromagnet Volt:	
2nd speed 1/min:		+	Del. quantity cm3/:	96.0097.00
Charge press. hPa:	1000	+	1000s.:	(93.5099.50)
Supply-pump		+	18th speed 1/min:	
	6.607.20	1	Charge press. hPa:	
Shutoff		1	Shutoff	
electromagnet Volt:	24	1	electromagnet Volt:	24
3rd speed 1/min:		1	Del. quantity cm3/:	
Charge press. hPa:		T		(66.0072.00)
	1000	T	(0005.;	(00.00/2.00)
Supply-pump	7 00 / /0	Ť	44. ala	
	3.804.40	†	Mech. shutoff:	
Shutoff	0.4	†	Mech. Abstellung:	
electromagnet Volt:	24	+		
		+	1st speed 1/min:	
Overlow quantity at	overflow valve:	+	Charge press. hPa:	
		+	Del. quantity cm3/:	0.003.00
1st speed 1/min:	500	+	1000s.:	(0.003.00)
Shutoff		+	Shutoff	
electromagnet Volt:	24	1	electromagnet volt:	24
	75.00119.50	1		
quantity cm3/10s:		1	Electr. shutoff:	
2nd speed 1/min:			Eccur Sideon.	
Charge press. hPa:		Ι	1st speed 1/min:	350
Shutoff	1000	T		
electromagnet Volt:	2/.	T	Del. quantity cm3/:	(0.003.00)
		Ť		(0.003.00)
	97.30180.70	†	Shutoff	
quantity cm3/10s:	(82.30195.70)	†	electromagnet volt:	-
		†		
Delivery-quant. and	breakaway char.:	+	Idle delivery:	
		+		
		+	1st speed 1/min:	350
1nd speed 1/min:		+	Shutoff	
Charge-air pressure-	-setting	+	electromagnet Volt:	24
point hPa:		1	22222 2000	

Del. quantity cm3/: 16.50...20.50 1000s.: (13.50...23.50)

cm3/: 5.0 Dispersion

1000s.: (5.0)

2rid speed 1/min: 450

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 0.00...3.00

Automatic starting fuel delivery:

1st speed 1/min: 200

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 120.00...160.00

1000s.: (95.00...145.00)

1/min: 300 2nd speed

Shutoff

electromagnet Volt: 24

Del. quantity cn3/: 55.00...75.00 1000s.: (55.00...75.00)

4th speed 1/min: 100

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 100.00...150.00

1000s.: (100.00...150.00)

Shutoff electromagnet:

Cut-in

min voltage : 20.0 : 24.0 Rated voltage

Mounting and assembly dimensions:

Designation

mm: 3.5...3.9 Κ KF mm: K-OT mm: 1.1...1.5 mm: 37.2...39.2 MS Ya mm: 49.3...57.6 Yb

Remarks:

* Correction at adjusting nut

Operate control lever after each manifold-pressure compensator pressure change.

Overflow restriction 0.75 mm - Part No. ...343,...344

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control

lever on distributor-head end

Note inst. in remarks column

Test scheet : CUM : 02.94 : 08.07.92 Edition replaces Calibrating oil : ISO-4113

Injection pump : VE6/12F1000R359 Type number : 0 460 426 138

Customer Part-No. :

Customer-specific information Customer : CASE

Engine : 6BT- 5.9 IND.

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil •0 return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly

Openina |

bar: 250.00...253.00 Pressure

Perforated-plate

diz er mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery

Prestroke mm: 0.3

(from BDC): +-0.02(0.04)

Start of delivery block Piston stroke mm: 1.5

 $mm: \leftarrow 0.02(0.06)$

: D Outlet.

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 750 Speed

Setting value mm: 3.00...3.40

Shutoff

electromagnet Volt: 24

Supply-pump pressure

1/min: 750 Speed

Setting value bar: 3.30...3.90

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

1/min: 850

Del. quantity cm3/

1000s.: 66.50...67.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 4.0 1000S.: (4.5)

Low-idle speed regulation

Speed 1/min: 450

Del. quantity cm3/ 1000s.: 6.00...12.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000s.: (7.0)

Full-load speed regulation

Speed 1/min: 1040

Del. quantity cm3/

1000s.: 53.00...59.00

Shutoff

electromagnet Volt: 24

Start:

1/min: 100 Speed

Del. quantity cm3/: 60.00...120.00

1000s.: 60.00 mind

Shutoff

electromagnet Volt: 24

Inspection pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1000

TD travel mm: 4.60...5.40 mm: (4.30...5.70)

Shutoff

electromagnet Volt: 24 3rd speed 1/min: 750

TD travel mm: 3.00...3.40 Shutoff electromagnet Volt: 24
Del. quantity cm3/: 63.50...66.50
1000S.: (62.00...68.00) mm: (2.50...3.90) Shutoff electromagnet Volt: 24
4th speed 1/min: 500
TD travel mm: 0.90...1.70 12th speed 1/min: 850 Shutoff mm: (0.60...2.00)electromagnet Volt: 24 Del. quyntity cm3/: 66.50...67.50 Shutoff 1000s.: (64.00...70.00) 1/min: 750 electromagnet Volt: 24 15th speed Supply-pump pressure characteristic: Shutoff electromagnet Volt: 24
Del. quantity cm3/: 63.00...66.00
1000s.: (61.00...68.00)
20th speed 1/min: 500 1/min: 500 1st speed Supply-pump pressure bar: 2.30...2.90 Shutoff Shutoff electromagnet Volt: 24 2nd speed 1/min: 750 electromagnet Volt: 24 Del. quantity cm3/: 40.50...48.50 1000s.: (38.50...50.50) Supply-pump pressure bar: 3.30...3.90 Shutoff Mech. shutoff: electromagnet Volt: 24 Mech. Abstellung: 1/min: 1000 3rd speed Supply-pump bar: 4.50...5.10 pressure Shutoff 1000s.: electromagnet Volt: 24 Shutoff electromagnet volt: 24 Overlow quantity at overflow valve: Electr. shutoff: 1/min: 500 1st speed Shutoff 1/min: 450 1st speed electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 : 41.70...86.10 Overflow 1000s.: (0.00...3.00) cm3/10s: (26.70...101.20) quantity Shutoff 1/min: 1000 2nd speed electromagnet volt: -Shutoff electromagnet Volt: 24 Idle delivery: : 55.60...139.00 Overflow cm3/10s: (40.60...154.00) quantity 1st speed 1/min: 450 Shutoff Delivery-quant, and breakaway char.: electromagnet Volt: 24 Del. quantity cm3/: 6.00...12.00 1000s.: (4.00...14.00) cm3/: 5.5 1000s.: (7.0) 1/min: 500 2nd speed 1/min: 1120 Dispersion Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 2nd speed Shutoff electromagnet Volt: 24
Del. quantity cm3/: 0.00...4.00
10005: (0.00...4.00) 3rd speed 1/min: 1060 Shutoff electromagnet Volt: 24
Del. quantity cm3/: 25.00...55.00
1000s.: (25.00...55.00) Automatic starting fuel delivery: 5th speed 1/min: 1040 1st speed 1/min: 130 Shutoff Shutoff electromagnet Volt: 24
Del. quantity cm3/: 53.00...59.00
1000s.: (50.00...62.00)
9th speed 1/min: 1000 electromagnet Volt: 24 Del. quantity cm3/: 70.00...130.00 1000s.: (70.00...130.00) 2nd speed 1/min: 240

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 5.00...35.00

1000s.: (5.00...35.00)

4th speed 1/min: 100

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 60.00...120.00 1000s.: (60.00...120.00)

Shutoff electromagnet:

Cut-in

min voltage : 20.0 Rated voltage : 24.0

Mounting and assembly dimensions:

Designation

K mm: -

mm: 5.0...5.4 KF

MS mm: 0.8...1.2

SVS max. mm: 1.2

mm: 18.8...20.8 XK XL mm: 9.9...13.3 mm: 34.8...38.8 Ya Yb mm: 38.2...43.4

Remarks:

: C.D.C. # 391 7563

Ya = Distance between VE flange and speed-control lever in idle

position

Measurement point = edge of control Lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Note inst. in remarks column

: CUM Test scheet Edition : C2.94 : 10.06.92 replaces Calibrating oil : ISO-4113

Injection pump : VE6/12F1150R225-23 Type number : 0 460 426 143

Customer Part-No. :

Customer-specific information

Customer

Engine : 6 BT -5.9 IND

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly

Opening

Pressure bar: 250.00...253.00

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery

mm: 0.3 Prestroke

(from BDC): +-0.02(0.04)

Start of delivery block Piston stroke mm: 1.3

mm: +-0.02(0.06)

Outlet.

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 750 Speed

Setting value mm: 3.40...3.80

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 750

Setting value bar: 3.50...4.10

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 900

Del. quantity cm3/

1**000s.: 71.50. .72.**50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 4.0

1000S.: (4.5)

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/

1000s.: 8.00...14.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 5.5

1000s.: (7.0)

Fuli-load speed regulation

Speed 1/min: 1190

Del. quantity cm3/

1000s.: 50.00...56.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 60.00...120.00

mind 1000s.: 60.00

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1100

mm: 5.50...6.30 TD travel mm: (5.20...6.60)

Shutoff

electromagnet Volt: 12 1/min: 750 3rd speed

TD travel mm: 3.40...3.80 Shutoff mm: (2.90...4.30) Shutoff electromagnet Volt: 12 4th speed 1/min: 500 mm: 1.50...2.30 TD travel Shutoff mm: (1.20...2.60) Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 53.00...61.00 1000s.: (51.00...63.00) 1/min: 500 1st speed Supply-pump pressure bar: 2,40...3.00 Shutoff Mech. shutoff: electromagnet Volt: 12 2nd speed 1/min: 750 Mech. Abstellung: Supply-pump bar: 3.50...4.10 pressure Shutoff 1000s.: (0.00...3.00) electromagnet Volt: 12 3rd speed 1/min: 1100 Shutoff electromagnet volt: 12 Supply-pump bar: 4.80...5.40 pressure Electr. shutoff: Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1000s.: (0.00...3.00) Shutoff 1st speed 1/min: 500 electromagnet volt: -Shutoff electromagnet Volt: 12 Idle delivery: : 41.70...36.13 cm3/10s: (26.70...101.20) quantity 1/min: 375 1st speed 1/min: 1150 2nd speed Shutoff Shutoff electromagnet Volt: 12 : 55.60...139.00 Overflow quantity cm3/10s: (40.60...154.00) 1000S.: (7.0) Delivery-quant. and breakaway char.: 1/min: 450 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...4.00 1000S.: (0.00...4.00) 1/min: 1300 2nd speed Shutoff Automatic starting fuel delivery: 1st speed 1/min: 130 Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00...130.00 1000s.: (70.00...130.00) electromagnet Volt: 12 Del. quantity cm3/: 15.00...55.00 1000s.: (15.00...55.00) 1/min: 1190 5th speed Shutoff 1/min: 240 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 20.00...60.00 1000s.: (20.00...60.00)

4th speed 1/min: 100

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 60.00...120.00 1000s.: (60.00...120.00)

Shutoff electromagnet:

Cut -in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: KF mm: 5.0...5.4
MS mm: 0.8...1.2
SVS max. mm: 1.3
XK mm: 20.2...22.2
XL mm: 11.5...14.9
Ya mm: 35.8...37.8
Yb mm: 41.7...47.1

Remarks:

: C.D.C. # 391 8282 : C.D.C. # 391 6949

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control

tever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Note inst. in remarks column

Test scheet : CUM Edition : 14.02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1300R386 : 0 460 426 162 Type number

Customer Part-No.:

Customer-specific information Customer : PERKINS

Engine : 6.60 PHASER 125

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil • C return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 020 assembly

Openina

bar: 172.00...175.00 Pressure

Perforated-plate

diameter mm: 0.6

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery

Prestroke mm: 0.5

(from BDC): +-0.02(0.04)

Start of delivery block Piston stroke mm: 1,0

 $mm: \leftarrow 0.02(0.06)$

Outlet : C

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100 Speed

Setting value mm: 1.80...2.20

Shutoff

electromagnet Volt: 24

Supply-pump pressure

1/min: 1100 Speed

Setting value bar: 5.20...5.80

Shutoff

electromagnet Volt: 24

Full-load del. w/out charge press.:

1/min: 1000

Del. quantity cm3/

1000s.: 76.50...77.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 3,5 1000S .: (4.0)

Low-idle speed regulation

Speed 1/min: 300

Del. quantity cm3/

1000s.: 19.50...23.50

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 3.5 1000s.: (3.5)

Full-load speed regulation

Speed 1/min: 1400

Del. quantity cm3/

1000s.: 44.50...50.50

Shutoff

electromagnet Volt: 24

Start:

1/min: 100 Speed

Del. quantity cm3/: 75.00...105.00 mind 1000s.: 75.00

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1300

mm: 2.80...3.60 TD travel

mm: (2.50...3.90)

Shutoff

electromagnet Volt: 24 3rd speed 1/min: 1100

TD travel mm: 1.80...2.20 Shutoff mm: (1.30...2.70) electromagnet Volt: 24 Del. quantity cm3/: 69.20...72.80 1000s.: (67.50...74.50) 11th speed 1/min: 700 Shutoff electromagnet Volt: 24 4th speed 1/min: 950 mm: 0.40...1.00 TD travel Shutoff mm: (0.00...1.40) Shutoff electromagnet Volt: 24 Supply-pump pressure characteristic: Shutoff electromagnet Volt: 24 Del. quyntity cm3/: 76.50...77.50 1000s.: (74.00...80.00) 1/min: 500 1st speed Supply-pump bar: 2.70...3.30 pressure 1/min: 500 20th speed Shutoff Shutoff electromagnet Volt: 24
Del. quantity cm3/: 63.50...67.50
1000S.: (62.00...69.00) electromagnet Volt: 24 2nd speed 1/min: 1100 Supply-pump bar: 5.20...5.80 pressure Shutoff Mech. shutoff: electromagnet Volt: 24 3rd speed 1/min: 1300 Mech. Abstellung: Supply-pump 1st speed 1/min: 1300 bar: 6.10...6.70 Del. quantity cm3/: 0.00...3.00 pressure 1000s.: (0.00...3.00) Shutoff electromagnet Volt: 24 Shutoff electromagnet volt: 24 Overlow quantity at overflow valve: Electr. shutoff: 1st speed 1/min: 500 Shutoff 1/min: 300 1st speed electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 Overflow : 41.70...83.40 1000s.: (0.00...3.00) cm3/10s: (26.70...98.40) quantity Shutoff 1/min: 1300 2nd speed electromagnet volt: -Shutoff electromagnet Volt: 24 Idle delivery: : 55.60...139.00 Overflow quantity cm3/10s: (40.60...154.00) 1/min: 300 1st speed Shutoff Delivery-quant. and breakaway char.: electromagnet Volt: 24 Del. quantity cm3/: 19.50...23.50 1000s.: (16.50...26.50) Dispersion cm3/: 3.5 2nd speed 1/min: 1530 1000s.: (3.5) 1/min: 400 Shutoff 2nd speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 Shutoff 1000s.: (0.00...3.00) 1/min: 350 electromagnet Volt: 24 Del. quantity cm3/: 14.00...22.00 1000s.: (11.00...25.00) 3rd speed Shutoff electromagnet Volt: 24 1/min: 1400 Del. quantity cm3/: 4.50...10.50 1000s.: (2.50...12.50) 5th speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 44.50...50.50 100Gs.: (41.50...53.50) Automatic starting fuel delivery: 9th speed 1/min: 1300 1st speed 1/min: 180

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 90.00...120.00

1000s.: (90.00...120.00)

2nd speed 1/min: 250

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 30.00...60.00

1000s.: (30.00...60.00)

1/min: 100 4th speed

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 75.00...105.00

1000s.: (75.00...105.00)

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mn: -

KF mm: -

MS mm: 1.2...1.6

SVS max. mm: 2.8

mm: 37.2...39.2 Ya Yb mm: 45.2...53.7

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control Lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control

lever on distributor-head end

Note inst. in remarks column

Test scheet Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1200R265-3 Type number : 0 460 426 190

Customer Part-No. :

Customer-specific information

Customen : SNF

Engine : WD612.61

kw: 100 Power 1/min: 2400 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening |

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing device travel

1/min: 800 Speed

Setting value mm: 1.40...1.80

Supply-pump pressure

Speed 1/min: 800

Setting value bar: 5.50...6.10

Full-load del. w/out charge press.:

Speed 1/min: 1000

Del. quantity cm3/

1000s.: 87.00...88.00

Low-idle speed regulation

Speed 1/min: 300

Del. quantity cm3/

1000s.: 16.00...20.00 Del. quantity cm3/: 3.5

1000s.: (3.5)

Full-load speed regulation

1/min: 1275 Speed

Del. quantity cm3/

1000s.: 27.00...33.00

Start:

1/min: 100 Speed

Del. quantity cm3/: 20.00...130.00

1000s.: 80.00

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

3rd speed 1/min: 800

mm: 1.40...1.80 TD travel mm: (0.90...2.30)

1/min: 600 4th speed

mm: 0.20...1.00 TD travel

mm: (0.00...1.30)

1/min: 1200 5th speed

mm: 3.10...3.90 TD travel

mm: (2.80...4.20)

Supply-pump pressure characteristic:

1/min: 1200 1st speed

Supply-pump

bar: 7.20...7.80 1/min: 800 pressure

2nd speed

Supply-pump

pressure bar: 5.50...6.10

3rd speed 1/min: 600

Supply-pump

bar: 4.50...5.10 pressure

Overlow quantity at overflow valve:

1st speed 1/min: 550

Overflow : 41.70...83.40 cm3/10s: (26.70...98.40) quantity 2nd speed 1/min: 1200 Overflow : 55.60...139.00 quantity cm3/10s: (40.60...154.00) Delivery-quant. and breakaway char.: 2nd speed 1/min: 1380 Del. quantity cm3/: 0.00...3.00 16308:: (6.00...3.00) 1/min: 1275 5th speed Del. quantity cm3/: 27.00...33.00 1000s.: (24.00...36.00) 1/min: 1230 8th speed Del. quantity cm3/: 55.00...95.00 1000s.: (55.00...95.00) 9th speed 1/min: 1200 Del. quantity cm3/: 85.00...88.00 1000s.: (84.00...89.00) 1/min: 1000 12th speed Del. quyntity cm3/: 87.00...88.00 1000s.: (85.00...90.00) 20th speed 1/min: 550 Del. quantity cm3/: 74.00...77.00 1000s.: (72.00...79.00) Mech. shutoff: Mech. Abstellung: 1st speed 1/min: 1200 Del. quantity cm3/: 0.00...3.00 1000s : (0.00 . . . 3.00) Idle delivery: 1/min: 300 1st speed 1000s.: (3.00...11.00) 3rd speed 1/min: 400 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 150
Del. quantity cm3/: 85.00...135.00
1000S.: (85.00...135.00) 1/min: 300 2nd speed Del. quantity cm3/: 55.00...75.00 1000s.: (55.00...75.00) 1/min: 100 4th speed

Del. quantity cm3/: 80.00...130.00
1000s.: (80.00...130.00)

Shutoff electromagnet:

Cut-in
min voltage : Rated voltage : Mounting and assembly dimensions:

Designation

K mm: 3.2...3.4 KF mm: 5.6...6.0 MS1 mm: 1.6...1.9 SVS max. mm: 5.7 Ya mm: 37.2...38.2 Yb mm: 52.8...61.2

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : CAS Edition : 02.94 replaces : 09.12.91 Calibrating oil : ISO-4113

Injection pump : VE6/12F1000R369-2 Type number : 0 460 426 196

Customer Part-No. :

Customer-specific information Customer : CASE

Engine : 6T 590

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 90! 027

Opening |

bar: 250.00...253.00 Pressure

Perforated plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery

Prestroke mm: 0.3

(from BDC): +0.02(0.04)

Start of delivery block Piston stroke mm: 1.5

mm: +-0.02(0.06)

Outlet : D

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 750

Setting value mm: 3.00...3.40

Shutoff

electromagnet Volt: 24

Supply-pump pressure

Speed 1/min: 750

Setting value bar: 3.30...3.90

Shutoff

electromagnet Volt: 24

Full-load del. w/out charge press.:

1/min: 850 Speed

Del. quantity cm3/

1000s.: 66.50...67.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 4.0 1000s.: (4.5)

Low-idle speed regulation

Speed 1/min: 450

Del. quantity cm3/

1000s.: 6.00...12.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000s.: (7.0)

Full-load speed regulation

Speed 1/min: 1040

Del. quantity cm3/

1000s.: 53.00...59.00

Shutoff

electromagnet Volt: 24

Start:

Speed 1/min: 100

Del. quantity cm3/: 60.00...120.00 mind 1000s.: 60.00

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1000

mm: 4.60...5.40 TD travel mn: (4.30...5.70)

Shutoff

electromagnet Volt: 24 1/min: 750 3rd speed

mm: 3.00...3.40 TD travel Shutoff mm: (2.50...3.90) electromagnet Volt: 24 Del. quantity cm3/: 63.50...66.50 1000s.: (62.00...68.00) 12th speed 1/min: 850 Shutoff electromagnet Volt: 24 1/min: 500 4th speed mm: 0.90...1.70 TD travel Shutoff m: (0.60...2.00)electromagnet Volt: 24 Del. quyntity cm3/: 66.50...67.50 Shutoff 1000S.: (64.00...70.00) 15th speed 1/min: 750 electromagnet Volt: 24 Supply-pump pressure characteristic: Shutoff electromagnet Volt: 24 1/min: 500 Del. quantity cm3/: 63.00...66.00 1st speed Supply-pump 1000s.: (61.00...68.00) bar: 2.30...2.90 1/min: 500 pressure 20th speed Shutoff Shutoff electromagnet Volt: 24 2nd speed 1/min: 750 electromagnet Volt: 24 Del. quantity cm3/: 40.50...48.50 2nd speed Supply-pump 1000s.: (38.50...50.50) pressure bar: **3.30**...3.90 Shutoff Mech. shutoff: electromagnet Volt: 24 3rd speed 1/min: 1000 Electr. shutoff: Supply-pump pressure bar: 4.50...5.10 1/min: 450 1st speed Shutoff Del. quantity cm3/: 0.00...3.00 electromagnet Volt: 24 1000s.: (0.00...3.00) Shutoff Overlow quantity at overflow valve: electromagnet volt: -1st speed 1/min: 500 Idle delivery: Shutoff electromagnet Volt: 24 1/min: 450 1st speed : 41.70...86.20 Overflow Shutoff cm3/10s: (26.70...101.20) quantity electromagnet Volt: 24 Del. quantity cm3/: 6.00...12.00 1000s.: (4.00...14.00) Dispersion cm3/: 5.5 1000s.: (7.0) 1/min: 1000 2nd speed Shutoff electromagnet Volt: 24 : 55.60...139.00 Overflow quantity cm3/10s: (40.60...154.00) 1/min: 500 2nd speed Shutoff Delivery-quant. and breakaway char.: electromagnet Volt: 24 Del. quantity cm3/: 0.00...4.00 1000s.: (0.00...4.00) 1/min: 1120 2nd speed Shutoff Automatic starting fuel delivery: electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 1st speed 1/min: 130 1000s.: (0.00...3.00) 1/min: 1060 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 70.00...130.00 10005:: (70.00...130.00) 3rd speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 25.00...55.00 1000s.: (25.00...55.00) 2nd speed 1/min: 240 1/min: 1040 5th speed Shutoff Shutoff electromagnet Volt: 24 Del. quantity cm3/: 5.00...35.00 1000s.: (5.00...35.00) electromagnet Volt: 24 Del. quantity cm3/: 53.00...59.00 1000s.: (50.00...62.00) 1/min: 1000 9th speed 1/min: 100 4th speed

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 60.00...120.00 1000s.: (60.00...120.00)

Shutoff electromagnet:

Cut-in

min voltage : 20.0 Rated voltage : 24.0

Mounting and assembly dimensions:

Designation

KF mm: 5.0..5.4 mm: 5.0..5.4 mm: 0.3...1.2 svs max. mm: 1.2 xK mm: 18.8...20.8 xL mm: 6.8...10.2 ya mm: 34.8...38.8 yb mm: 38.2...43.4

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Note inst. in remarks column

Test scheet : NIS Edition : 02.94 replaces

Calibrating oil : ISO-4113

Injection pump : ve6/12F120GR325-2 Type number : 0 460 426 206

Customer Part-No. :

Customer-specific information Customer : NISSAN-MISA

"DI" Engine : HX 150

KW: 119.5 Power Speed 1/min: 1200

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 109 assembly

Openina |

Pressure bar: 207.00...210.00

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mn: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100 Charge press. hPa: 1000 Setting value mm: 1.60...2.00

Shutoff

electromagnet Volt: 12

Supply-oump pressure

1/min: 1100 Speed Charge press hPa: 1000

Setting value bar: 7.20...7.80

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 800 Speed Charge press. hPa: 1000

Del. quantity cm3/ 1000s.: 92.00...93.00

Shutoff

electromagnet Volt: 12 cm3/: 5.0 Dispersion 1000s.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

1000s.: 82.50...83.50

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

1/min: 400 Speed

Del. quantity cm3/

1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 5.0 1000s.: (5.0)

Full-load speed regulation

1/min: 1300 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 44.00...50.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 100.00...150.00

1000s.: 100.0 mind

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:	1nd speed 1/min: 800 Charge-air pressure-setting
2nd speed 1/min: 1200	point hPa: 500
Charge press hPa: 1000	LDA-stroke mm: 5.2
TD travel mm: 2.303.10	Shutoff
mm: (2.003.40)	electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 85.0086.00
electromagnet Volt: 12	10005.: (81.5089.50)
3rd speed 1/min: 1100	- 2nd speed 1/min: 1400
Charge press hPa: 1000	Charge press. hPa: 1000
TD travel mm: 1.602.00	Shutoff
mm: (1.102.50)	electromagnet Volt: 12
Shutoff -	Poel. quantity cm3/: 0.003.00
electromagnet Volt: 12	1000s.: (0.003.00)
4th speed 1/min: 1000	- 3rd speed 1/min: 1330
Charge press hPa: 1000	Charge press. hPa: 1000
TD travel mm: 0.501.30	- Shutoff
mm: (0.201.60)	electromagnet Volt: 12
Shutoff	- Del. quantity cm3/: 0.0010.00
electromagnet Volt: 12	- 1000s.: -
	- 5th speed 1/min: 1300
Supply-pump pressure characteristic:	- Charge press. hPa: 1000
	Shutoff
1st speed 1/min: 1200	- electromagnet Volt: 12
Charge press. hPa: 1000	- Del. quantity cm3/: 44.0050.00
Supply-pump	1000s.: -
pressure bar: 7.808.40	- 8th speed 1/min: 1280
Shutoff -	Charge press. hPa: 1000
electromagnet Volt: 12	- Shutoff
2nd speed 1/min: 1100	electromagnet Volt: 12
Charge press. hPa: 1000	- Del. quantity cm3/: 63.0083.00
Supply-pump	- 1600s.: -
pressure bar: 7.207.80	- 9th speed 1/min: 1200
Shutoff	- Charge press. hPa: 1000
electromagnet Volt: 12	- Shutoff
3rd speed 1/min: 500 Charge press. hPa: 1000	electromagnet Volt: 12
	- Del. quantity cm3/: 85.0088.00
Supply-pump pressure bar: 4.304.90	1000S.: (83.0090.00)
pressure bar: 4.304.90 Shutoff	12th speed 1/min: 800
electromagnet Volt: 12	- Charge press. hPa: 1000
etectionagnet vott. 12	- Shutoff
Overlow quantity at overflow valve:	electromagnet Volt: 12 Del. quyntity cm3/: 92.0093.00
The state of the s	10008:: (89.5095.50)
1st speed 1/min: 500	- 18th speed 1/min: 500
Charge press. hPa: 1000	- Charge press. hPa: -
Shutoff	- Shutoff
electromagnet Volt: 12	electromagnet Volt: 12
Overflow : 75.00119.50	Del. quantity cm3/: 82.5083.50
quantity cm3/10s: (60.00134.50)	10008.: (80.0086.00)
2nd speed 1/min: 1200 -	- 20th speed 1/min: 500
Charge press. hPa: 1000	- Charge press. hPa: 1000
Shutoff	- Shutoff
electromagnet Volt: 12	- electromagnet Volt: 12
Overflow : 97.30180.70	- Del. quantity cm3/: 100.00106.00
quantity cm3/10s: (82.30195.70)	1000s.: -
	•
Delivery-quant. and breakaway char.:	
1	<pre>- Delivery-quant. and breakaway char.:</pre>

Inj.-qty.values, temp.-compensated temperatura Shutoff electromagnet Vult: 12 Del. quantity cm3/: 77.00...83.00 1000s.: (80.00...80.00)

Mech. shutoff: Mech. Abstelling:

1st speed 1/min: 1200 Charge press. hPa: 1000 Del. quantity cm3/: 0.00...3.00 1000s.: -

Shutoff

electromagnet volt: 12

Electr. shutoff:

1st speed 1/min: 400 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00)

Shutoff

electromagnet volt: -

Idle delivery:

1st speed 1/min: 400 Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 13.00...17.00

1000s.: (10.00...20.00)

Dispersion cm3/: 5.01000s.: (5.0)

1/min: 480 2nd speed

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00)

Automatic starting fuel delivery:

1st speed 1/min: 200

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 120.00...170.00 10005.: -

2nd speed 1/min: 300

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 60.00...90.00

1000s.: -

1/min: 100 4th speed

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 105.00...155.00 1000s.: -

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

mm: 3.7...3.9 KF mm: KOT MS mm: 1,4...1.6 SVS max. mm: 4.4 LDA stroke mm: 5.2 Ya mm: 37.9...39.9 Yb mm: 52.2...60.6

Remarks:

Operate control lever after each manifold pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Values without check tolerance do not apply when checking pump.

Note inst. in remarks column

Test scheet : NIS Edition : 02.94

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE6/12F1200R325-3 Type number : 0 460 425 207

Customer Part-No. :

Customer-specific information Customer : NISSAN-MISA

Engine : HX 130 "DI"

Power KW: 103 Speed 1/min: 2400

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 109

Opening |

Pressure bar: 207.00...210.00

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery
Prestroke mm: (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 900 Charge press. hPa: 1000 Setting value mm: 1.80...2.20

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 900 Charge press hPa: 1000

Setting value bar: 6.30...6.90

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

Speed 1/min: 800 Charge press. hPa: 1000 Dei. quantity cm3/

1000s.: 77.50...78.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 5.0 10908.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

1000s.: 73.00...74.00

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 400

Del. quantity cm3/

1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 5.0 1000S.: (5.0)

Full-load speed regulation

Speed 1/min: 1300 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 48.00...54.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 100.00...150.00

mind 1000s.: 100.0

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

K01

	•	-		
Timing-device charac	cteristic:	+	1nd speed 1/min:	
2md appeal 1/min.	4200	†	Charge-air pressure	
2nd speed 1/min:		†	point hPa:	
Charge press hPa:	7 70 / 50			5.2
	3.704.50	†	Shutoff	40
	(3.205.00)	†	electromagnet Volt:	12
Shutoff	1	†	Del. quantity cm3/:	74.0075.00
electromagnet Volt:		†		(70.5078.50)
3rd speed 1/min:		-	2nd speed 1/min:	
	1000	-	Charge press. hPa:	1000
TD travel mm:		-	Shutoff	
	(1.302.70)	-	electromagnet Volt:	12
Shutoff	-	-	Del. quantity cm3/:	0.003.00
electromagnet Volt:	12	-		(0.003.00)
4th speed 1/min:	700	-	3rd speed 1/min:	
Charge press hPa:	1000	-	Charge press. hPa:	
	0.401.20		Shutoff	
	(0.101.50)		electromagnet Volt:	12
Shutoff			Del. quantity cm3/:	
electromagnet Volt:	12			(0.0010.00)
ceceromagnee voter	1		5th speed 1/min:	
Supply-pump pressure	a characteristic			
acidate hough bisessoil	e character iscit.		Charge press. hPa:	1000
1st speed 1/min.	1200	1	Shutoff	45
1st speed 1/min:		†	electromagnet Volt:	
Charge press. hPa:	1000	-	Del. quantity cm3/:	
Supply-pump	1 70 0 70	ŀ	1000s.:	
	7.708.30	-	8th speed 1/min:	
Shutoff	. +	-	Charge press. hPa:	1000
electromagnet Volt:		-	Shutoff	
2nd speed 1/min:		-	electromagnet Volt:	12
Charge press. hPa:	1000	-	Del. quantity cm3/:	55.0075.00
Supply-pump	, 1	_	1000s.:	
	6.306.90	-	9th speed 1/min:	1200
Shutoff	4	-	Charge press. hPa:	
electromagnet Volt:	12	_	Shutoff	
3rd speed 1/min:		_	electromagnet Volt:	12
Charge press. hPa:		_	Del. quantity cm3/:	
Supply-pump			10005	(65.5072.50)
pressure bar:	440 500 1		12th speed 1/min:	200
Shutoff	1		Charge press. hPa:	1000
electromagnet Volt:	12		Shutoff	1000
cecer anagnet vote.	I			10
Overlow quantity at	overflou valvo:		electromagnet Volt:	
over tow quarterty at	over row valve.		Del. quyntity cm3/:	
1st speed 1/min.	roo T			(75.0081.00)
1st speed 1/min:			18th speed 1/min:	
Charge press. hPa:	1000	-	Charge press. hPa:	-
Shutoff	42 1	-	Shutoff	4.0
electromagnet Volt:			electromagnet Volt:	
Overflow :		-	Del. quantity cm3/:	
quantity cm3/10s:		-		(70.5076.50)
2nd speed 1/min:			20th speed 1/min:	
Charge press. hPa:	1000	-	Charge press. hPa:	1000
Shutoff	, 4		Shutoff	
electromagnet Volt:	12	-	electromagnet Volt:	12
	97.30180.70		Del. quantity cm3/:	
quantity cm3/10s:		-	1000s.:	
	1	L	1000011	
Delivery-quant. and	breakaway char.:		Mech. shutoff: Mech. Abstellung:	

1/min: 1200 1st speed Charge press. hPa: 1000

Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00)

Shutoff

electromagnet volt: 12

Electr. shutoff:

1st speed 1/min: 400 Charge press. hPa: -

Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00)

Shutoff

electromagnet volt: -

Idle delivery:

1st speed 1/min: 400

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 13.00...17.00

1000s.: (10.00...20.00)

cm3/: 5.0 Dispersion 1000s.: (5.0)

2nd speed 1/min: 480

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00)

Automatic starting fuel delivery:

1/min: 200 1st speed

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 115.00...165.00

1000s.: (115.00...165.00)

1/min: 300 2nd speed

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 55.00...85.00 1000S.: (55.00...85.00)

4th speed 1/min: 100

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 100.00...150.00

1000s.: (100.00...150.00)

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

mm: 3.7...3.9 KF mm: KOT MS mm: 1.3...1.7

LDA stroke mm: 5.2

mm: 37.9...39.9 mm: 52.1...60.5 Ya Yb

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control

lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Permissible port/port scatter with stop test, mechanical = max. 5.0 ccm/1000 S.

Note inst. in remarks column

Test scheet : NIS Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1200R491 Type number : 0 460 426 208

Customer Part-No. :

Customer-specific information Customer : NISSAN-MISA

"TOT" Engine : HX 110

Power KW: 87 1/min: 1200 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 109 assembly

Opening |

Pressure bar: 207.00...210.00

Perforated-plate

diameter mm: 0.5

Test ini. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery Prestroke mn: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 900

Setting value mm: 2.10...2.50

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 900 Speed

Setting value bar: 6.30...6.90

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 800 Speed

Del. quantity cm3/

1000s.: 63.50...64.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 5.0 1000s.: (5.0)

Low-idle speed regulation

1/min: 400 Speed

Del. quantity cm3/ 1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 5.0 1000S.: (5.0)

Full-load speed regulation

1/min: 1270

Del. quantity cm3/

1000s.: 29.00...35.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 90.00...140.00

1000s.: 90.00 mind

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 1200 2nd speed

TD travel mm: 3.70...4.50 mm: (3.40...4.80)

Shutoff

electromagnet Volt: 12 3rd speed 1/min: 900

mm: 2.10...2.50 TD travel

mn: (1.60...3.00)

K04

Shutoff electromagnet Volt:		† 0	el. quyntity	/ cm3/:	63.5064.50 (61.0067.00)
4th speed 1/min: TD travel mm:	0.401.20	+ s	20th speed Shutoff	1/min:	500
Shutoff	(0.101.50)			/ cm3/:	61.5064.50
electromagnet Volt:	12	‡	ົາ	1000s.:	(60.0066.00)
Supply-pump pressure			Mech. shutoff Mech. Abstell		
1st speed 1/min: Supply-pump		‡ 1	st speed	1/min:	1200
pressure bar: Shutoff	7.708.30	† C	Del. quantity	/ cm3/:	0.003.00 (0.003.00)
electromagnet Volt:	12	ļ ,	Shutoff		
2nd speed 1/min:			electromagnet	volt:	12
Supply-pump		+			
pressure bar: Shutoff	6.306.90	<u></u>	Electr. shuto	off:	
electromagnet Volt:	12	1 1	st speed	1/min.	400
3rd speed 1/min:			el quantity	cm3/:	0.003.00
Supply~pump			1	000s.:	(0.003.90)
pressure bar:	4.405.00		Shutoff		
Shutoff	12	† e	electromagnet	volt:	-
electromagnet Volt:	16	Ι,	(dle delivery	/ •	
Overlow quantity at	overflow valve:	+	·	1/min:	400
1st speed 1/min: Shutoff	500	 s	Shutoff electromagnet		
electromagnet Volt:	12				13.0017.00
	75.00119.50	+			(10.0020.00)
quantity cm3/10s:		+ 0	Dispersion	cm3/:	5.0
2nd speed 1/min: Shutoff	1200	† 2		000s.:	
electromagnet Volt:	12		Shutoff	17101111;	500
Overflow :	97.30180.70		lectromagnet	: Volt:	12
quantity cm3/10s:	(82.30195.70)		el. quantity	/ cm3/:	0.003.00
Delivery-quant. and	breakaway char.:	‡	ſ	wws.:	(0.003.00)
, ,		+ A	utomatic sta	irting 1	fuel delivery:
2nd speed 1/min: Shutoff	1350		st speed Shutoff	1/min:	200
electromagnet Volt:	12		lectromagnet	: Volt:	12
Del. quantity cm3/:		f D	el. quantity	cm3/:	105.00155.00
	(0.003.00)	t	7	000s.:	-
5th speed 1/min: Shutoff	1270	,	and another	1/	700
	40			1/min:	300
electromagnet Volt:			hutoff		
Del. quantity cm3/:			lectromagnet		
9th speed 1/min: Shutoff	(25.0039.00) 1200	+ 0		900s.:	45.0075.00 -
	12	T,	th annual	4/	100
electromagnet Volt: Del. quantity cm3/:	57 50 KN 50		th speed Shutoff	1/min:	100
1000	(56.0062.00)			· Malla	12
			lectromagnet		
Shutoff		Į D	et. quantity	/ cm3/: 000s.:	90.00140.00
electromagnet Volt:	12	+			

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.7...3.9
KF mm: KOT
MS mm: 1.3...1.7
SVS max. mm: 5.5
LDA stroke mm: 5.2
Ya mm: 37.9...39.9
Yb mm: 48.8...57.2

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : MAN Edition : 02.94 : 15.02.93 replaces Calibrating oil : ISO-4113

: VE6/12F12COR496 Injection pump Type number : 0 460 426 209

Customer Part-No. :

Customer-specific information

Customer

Engine : D 0826 LF 07 "DI"

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 110 assembly

Opening .

bar: 250.00...253.00 Pressure

Perforated plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery

Prestroke mm: 0.2

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 850 Charge press. hPa: 1000

Setting value mm: 2.00...2.40

Supply-pump pressure

Speed 1/min: 850 Charge press hPa: 1000

Setting value bar: 7.30...7.90

Full-load del. with charge press.:

1/min: 1000 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 91.50...92.50

cm3/: 4.0 Dispersion 1000s.: (4.5)

Full-load del. w/out charge press.:

Speed 1/min: 500 Del. quantity cm3/

1000s.: 59.50...60.50

Low-idle speed regulation

Speed 1/min: 250

Del. quantity cm3/ 1000s.: 16.50...23.50 Del. quantity cm3/: 6.0 1000s.: (6.5)

Full-load speed regulation

1/min: 1280 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 62.00...68.00

Start:

Speed 1/min: 100
Del. quantity cm3/: 60.00...100.00
mind 1000s.: 60.00

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

1/min: 950 2nd speed

Charge press hPa: 1000

mm: 2.90...3.70 TD travel mm: (2.60...4.00) 1/min: 850

3rd speed Charge press

hPa: 1000 mm: 2.00...2.40 TD travel

mm: (1.50...2.90)

1/min: 750 4th speed

hPa: 1000 Charge press

TD travel mm: 0.60...1.40

mm: (0.30...1.70)

Supply-pump pressure characteristic:

K07

	+ Del. quantity cm3/: 92.1097.10
1st speed 1/min: 500	10005.: (90.6098.60)
Charge press. hPa: 1000	17th speed 1/min: 600
Supply-pump	+ Charge press. hPa: 1000
pressure bar: 5.506.10	+ Del. quantity cm3/: 98.50103.50
zna speed 1/min: 850	1000H.: (97.00105.00)
Charge press. hPa: 1000	18th speed 1/min: 500
Supply-pump	- Charge press. hPa: -
pressure bar: 7.307.90	+ Del. quantity cm3/: 59.5060.50
3rd speed 1/min: 1200	1000s.: (57.5062.50)
Charge press. hPa: 1000 Supply-pump	- 20th speed 1/min: 500
pressure bar: 9.009.60	+ Charge press. hPa: 1000 + Del. quantity cm3/: 102.10111.10
pi casare bai: 7:00:1.7:00	1000s.: (100.60112.60)
Overlow quantity at overflow valve:	10000
The same desired as the same same same same same same same sam	Mech. shutoff:
1st speed 1/min: 500	+ Mech. Abstellung:
Charge press. hPa: -	
Overflow : 41.7086.10 quantity cm3/10s: (26.70101.10)	1st speed 1/min: 1200
quantity cm3/10s: (26.70101.10)	+ Charge press. hPa: 1000
2nd speed 1/min: 1200	- Del. quantity cm3/: 0.003.00
Charge press. hPa: 1000	† 1000s.: (0.003.00)
Overflow : 55.60139.00	†
quantity cm3/10s: (40.60154.00)	f Idle delivery:
Dol from war and brooks we show	4-4
Delivery-quant. and breakaway char.:	1st speed 1/min: 250
	Del. quantity cm3/: 16.5023.50
1nd speed 1/min: 500	1000s.: (14.5025.50) Dispersion cm3/: 6.0
Charge-air pressure-setting	+ Dispersion cm3/: 6.0 + 1000S.: (6.5)
point hPa: 450	2nd speed 1/min: 400
LDA-stroke mm: 7.5	Del. quantity cm3/: 0.003.00
Del. quantity cm3/: 92.5093.50	10005.: (0.003.00)
10008.: (90.5095.50)	10000: (0:00::5:00)
2nd speed 1/min: 1450	+ Automatic starting fuel delivery:
Charge press. hPa: 1000	-
Del. quantity cm3/: 0.003.00	+ 1st speed 1/min: 330
1000s.: (0.003.00)	Pel. quantity cm3/: 70.00100.00
3rd speed 1/min: 1350	+ 1000S.: (70.00100.00)
Charge press. hPa: 1000	
Del. quantity cm3/: 0.0015.00	+ 2nd speed 1/min: 430
10005.: (0.0015.00)	bel. quantity cm3/: 40.0070.00
4th speed 1/min: 1300 Charge press. hPa: 1000	1000s.: (40.0070.00)
Del. quantity cm3/: 30.0066.00	+ 4th speed 1/min: 100
10005:: (30.0066.00)	Del. quantity cm3/: 60.00100.00
5th speed 1/min: 1280	10008.: (60.00100.00)
Charge press. hPa: 1000	10003 (00.00 100.00)
Del. quantity cm3/: 62.0068.00	Mounting and assembly dimensions:
1000s.: (60.5069.50)	
9th speed 1/min: 1200	+ Designation
Charge press. hPa: 1000	+ K mm: -
Del. quantity cm3/: 86.9091.90	+ KF mm: KOT
1000\$:: (85.4093.40)	+ MS mm: 0.91.3
12th speed 1/min: 1000	+ SVS max. mm: 1.1
Charge press. hPa: 1000	+ LDA stroke mm: 7.5
Del. quyntity cm3/: 91.5092.50	+ Ya mm: 37.440.4
1000S.: (89.5094.50) 15th speed 1/min: 800	+ Yb mm: 44.249.4
	Pompaka
Charge press. hPa: 1000	+ Remarks:

Operate control lever after each manifold—pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Pump with slave plunger

Note inst. in remarks column

Test scheet Edition : 02.94

replaces

Calibrating oil : 180-4113

Injection pump : VE6/12F1250R498 : 0 460 426 211 Type number Customer Part-No. : 3 282 306

Customer-specific information

Customer : CDC

Engine : 6 BT- 5.9A

Power KW: 132 Speed 1/min: 2500

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 109 assembly

Opening |

bar: 207.00...210.00 Pressure

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Start of delivery block Piston stroke mm: 1.4

mm: +-0.02(0.06)

Outlet : D

Injection-pump setting values Test specifications in parentheses Timing-device travel

Speed 1/min: 1000 Charge press. hPa: 1000

Setting value mm: 1.50...1.90

Shutoff

electromagnet Volt: 24

Supply-pump pressure

1/min: 1000 Charge press hPa: 1000

Setting value bar: 6.30...6.90

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

1/min: 850 Speed Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 81.50...82.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 5.0 1000s.: -

Full-load del. w/out charge press.:

1/min: 500

Del. quantity cm3/

1000s.: 65.50...66.50

Shutoff

electromagnet Volt: 24

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

1000s.: 6.00...10.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000s.: (7.0)

Full-load speed regulation

Speed 1/min: 1380 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 63.50...69.50

Shutoff

electromagnet Volt: 24

Start:

Speed 1/min: 100 Del. quantity cm3/: 75.00...105.00

1000s.: 75.00 mind

Shutoff Shutoff electromagnet Volt: 24 electromagnet Volt: 24 Inspection-pump test specifications Overlow quantity at overflow valve: Test specifications in parentheses 1/min: 500 1st speed Timing-device characteristic: Charge press. hPa: -Shutoff 3rd speed 1/min: 1250 electromagnet Volt: 24 Charge press hPa: 1000 : 41.70...83.40 Overflow TO travel mn: 2.30...3.10 cm3/10s: (26.70...93.40) quantity | mm: (2.00...3.40) 2nd speed 1/min: 1250 Shutoff Charge press. hPa: 1100 electromagnet Volt: 24 Shutoff 1/min: 1000 5th speed electromagnet Volt: 24 Charge press. hPa: 1000 : 55.60...139.00 Overflow mm: 1.50...1.90 mm: (1.00...2.40) TD travel quantity cm3/10s: (40.60...154.00) Shutoff Delivery-quant. and breakaway char.: electromagnet Volt: 24 1/min: 850 7. Rotacao Charge press. hPa: 1000 1nd speed 1/min: 600 mm: 0.30...1.10 TD travel Charge-air pressure-setting mm: (0.00...1.40) point hPa: 450 Shutoff LDA-stroke mm: 6.5 electromagnet Volt: 24 8th speed 1/min: 450 Shutoff electromagnet Valt: 24 Del. quantity cm3/: 72.50...73.50 Charge press. hPa: TD travel mm: 2.00...3.00 1000s.: (69.00...77.00) mm: (1.80...3.20) 1/min: 1500 2nd speed KSB/AFB Charge press. hPa: 1000 Volt: 24 valve Shutoff Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 electromagnet Volt: 24 1000s.: -Supply-pump pressure characteristic: 1/min: 1465 3rd speed Charge press. hPa: 1000 1/min: 500 1st speed Shutoff Charge press. hPa: 1000 electromagnet Volt: 24 Del. quantity cm3/: 15.00...35.00 Supply-pump bar: 3.90...4.50 1000s .: pressure Shutoff 4th speed 1/min: 1380 Charge press. hPa: 1000 Shutoff electromagnet Volt: 24 1/min: 850 2nd speed Charge press. hPa: 1000 electromagnet Volt: 24 Supply-pump Del. quantity cm3/: 63.50...69.50 bar: 5.90...6.50 pressure 1000s.: (60.50...72.50) Shutoff 1/min: 1250 5th speed electromagnet Volt: 24 Charge press. hPa: 1000 3rd speed 1/min: 1000 Shutoff Charge press. hPa: 1000 electromagnet Volt: 24 Del. quantity cm3/: 80.00...83.00 1000s.: (78.50...84.50) 6th speed 1/min: 1200 Supply-pump pressure bar: 6.30...6.90 Shutoff electromagnet Volt: 24 4th speed 1/min: 1250 Charge press. hPa: 1000 Shutoff Charge press. hPa: 1000 electromagnet Volt: 24 Del. quantity cm3/: 81.50...84.50 1000s.: (79.50...86.50) Supply-pump bar: 7.30...7.90 pressure 1/min: 850 7th speed

Charge press. hPa: 1000 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 81.50...82.50 1000S.: (79.00...85.00) 1/min: 500 8th speed Charge press. hPa: -Shutoff electromagnet Volt: 24 Del. quantity cm3/: 65.50...66.50 1000s.: (62.00...70.00) Mech. shutoff: Mech. Abstellung: 1/min: 1250 1st speed Charge press. hPa: 1000 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) electromagnet volt: 24 Electr. shutoff: 1/min: 350 1st speed Charge press. hPa: -Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 5.00...10.00 10005.: (3.00...13.00) Dispersion cm3/: 5.5 1000s.: (7.0) 2nd speed 1/min: 410 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1/min: 240 1st speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 60.00...90.00 1000s.: (60.00...90.00)

1/min: 130

Del. quantity cm3/: 80.00...120.00

1000s.: (80.00...120.00)

4th speed 1/min: 100 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 75.00...105.00 **1000s.:** (**75.0**0....105.06) Shutoff electromagnet: Cut-in min voltage : 20.0 Rated voltage : 24.0 Mounting and assembly dimensions: Designation mm: 3.6...3.8 KF mm: KOT MS1 mm: 1.2...1.5 SVS max. mm: 3.7 LDA stroke mm: 6.5 mm: 34.8...38.8 mm: 48.2...53.8 Ya Yb Remarks: Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Permissible port/port scatter with stop test, mechanical = max. 5.0 ccm/1000 S.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Operate control lever after each manifold—pressure compensator pressure change.

2nd speed

electromagnet Volt: 24

Shutoff

Note inst. in remarks column

Test scheet : FIA Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1350R506 Type number : 0 460 426 215

Customer Part-No. :

Customer-specific information Customer : IVECO FIAT

: 8060.45.4400 "DI" Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly

Opening .

bar: 250.00...253.00 Pressure

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery Prestroke mm: -

(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100 Speed Charge press. hPa: 1000

Setting value mm: 3.10...3.30

Shutoff

electromagnet Volt: 24

Supply-pump pressure

Speed 1/min: 1100

Charge press hPa: 1000 Setting value bar: 7.90...8.50

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

1/min: 700 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 74.50...75.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 5.0 1000s.: (5.0)

Full-load del. w/out charge press.:

1/min: 500 Speed

Del. quantity cm3/

1000s.: 48.50...49.50

Shutoff

electromagnet Volt: 24

Low-idle speed regulation

1/min: 350 Speed

Del. quantity cm3/

1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 4.0 1000s.: (5.0)

Full-load speed regulation

Speed 1/min: 1525 hPa: 1000 Charge press

Del. quantity cm3/

1000s.: 27.00...33.00

Shutoff

electromagnet Volt: 24

Start:

1/min: 100

Del. quantity cm3/: 60.00...110.0 mind 1000s.: 60.00

mind

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min:	1350 +	Shutoff	
	1000	electromagnet Volt: 24	
	4.605.20	Del. quantity cm3/: 62.50	063.50
	(4.205.60)	1000s.: (59.0	0067.00)
Shutoff	+	2nd speed 1/min: 1625	
electromagnet Volt:		Charge press. hPa: 1000	
3rd speed 1/min:		Del. quantity cm3/: 0.00	3.00
	1000	1000s.: (0.0	03.00)
	1.702.30	4th speed 1/min: 1475	
	(1.302.70)	Charge press. hPa: 1000	
Shutoff	T	Shutoff	
electromagnet Volt:		electromagnet Volt: 24	
4th speed 1/min:		Del. quantity cm3/: 45.0	J53.UU
Charge press hPa:	1000	10005.: (43.)	3035.00)
TD travel mm:	(2.503.50)	5th speed 1/min: 1525	
Shutoff	(2.303.90)	Charge press. hPa: 1000 Shutoff	
electromagnet Volt:	24	electromagnet Volt: 24	
etetti amgilet vott.	I	Del. quantity cm3/: 27.00	3 77 00
Supply-pump pressur	e characteristic:	1000S.: (24.0	JJJ.UU
compet parts pressure	T	9th speed 1/min: 1350	3030.007
1st spe∈d 1/min:	1350	Charge press. hPa: 1000	
	1000	Shutoff	
Supply-pump		electromagnet Volt: 24	
pressure bar:	9.309.90	Del. quantity cm3/: 67.50	070.50
Shutoff	+	1000s.: (65.	5072.50)
electronagnet Volt:		12th speed 1/min: 1200	
2nd speed 1/min:		Charge press. hPa: 1000	
Charge press. hPa:	1000	Shutoff	
Supply-pump	+	electromagnet Volt: 24	
	7.908.50	Del. quyntity cm3/: 70.00	074.00
Shutoff	+	10005.: (68.	5075.50
electromagnet Volt:		13th speed 1/min: 700	
4th speed 1/min:		Charge press. hPa: 1000	
Charge press. hPa:	1000	Shutoff	
Supply-pump	5 m 5 (0	electromagnet Volt: 24	35 50
pressure bar:	5.005.60	Del. quantity cm3/: 74.50	
Overlow quantity at	T T	1000S.: (71.5	0/8.50)
over tow quarterty at	overstow valve:		
1st speed 1/min:	600 I	Charge press. hPa: 1000 Shutoff	
Charge press. hPa:		electromagnet Volt: 24	
Shutoff		Del. quantity cm3/: 77.50	21 50
electromagnet Volt:	24	10005.: (76.0	
	90.20131.90	15th speed 1/min: 500	3303.007
quantity cm3/10s:		Charge press. hPa: -	
2nd speed 1/min:		Shutoff	
Charge press. hPa:	1000	electromagnet Volt: 24	
Shutoff	-	Del. quantity cm3/: 48.50	049.50
electromagnet Volt:		1000s.: (45.5	5052.50)
	97.30180.70		
quantity cm3/10s:	(82.30195.70)	Mech. shutoff:	
Dalf	†	Mech. Abstellung:	
Delivery-quant. and	breakaway char.:	A	
	†	1st speed 1/min: 1350	
1nd enough 1/mins	500	Charge press. hPa: 1000	7 00
1nd speed 1/min:		Del. quantity cm3/: 0.00	
Charge—air pressure point hPa:	350 T	1000S.: (0.00 Shutoff	J5.UU)
LDA-stroke mm:		electromagnet volt: 24	
UV- UIV-	~··	LICULIUNGSHEL VULL /4	

Electr. shutoff:

1st speed 1/min: 350

Del. quantity cm3/: 0.00...3.00

1000s.: (0.00...3.00)

Shutoff

electromagnet volt: -

Idle delivery:

1st speed 1/min: 350

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 13.00...17.00

1000s.: (10.00...20.00)

Dispersion cm3/: 4.0

1000S.: (5.0)

2nd speed 1/min: 425

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 0.00...3.00

1000s.: (0.00...3.00)

3rd speed 1/min: 375

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 4.00...10.0

1000s.: (2.00...12.0)

Automatic starting fuel delivery:

1st speed 1/min: 250

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 40.00...60.00

1000s .: -

2nd speed 1/min: 130

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 60.00...110.00

1000s.: -

4th speed 1/min: 100

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 60.00...110.00

1000s.: -

Shutoff electromagnet:

Cut-in

min voltage : 20.0 Rated voltage : 24.0

Mounting and assembly dimensions:

Designation

K mm: 3.5...3.7

KF mm: KOT

K15

MS1 mm: 1.1...1.4

LDA stroke mm: 6.1

Ya mm: 37.9...39.9 Yb mm: 41.2...46.6

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle

position

Measurement point = edge of control

lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control

lever on distributor-head end

Note inst. in remarks column

Test scheet : PEN Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1950L527 Type number : 0 460 426 218

Customer Part-No. :

Customer-specific information Customer : PENTA

Engine : KAD / KAMD 42 CE

Power kw: 155 1/min: 1950 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 110 assembly

Openina |

bar: 250.00...253.00 Pressure

Perforated plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery

Prestroke mm: 0.3

 $(from BDC): \leftarrow 0.02(0.04)$

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Speed Charge press. hPa: 1500

mm: 3.30...3.70 Setting value

Supply-pump pressure

1/min: 1500 Skeed Charge press hPa: 1500

Setting value bar: 7.70...8.30

Full-load del. with charge press.:

1/min: 1500 Speed Charge press. hPa: 1500 Del. quantity cm3/

1000s.: 81.50...82.50

cm3/: 5.0 Dispersion 100GS .: (5.0)

Full-load del. w/out charge press.:

1/min: 600 Speed

Del. quantity cm3/

1000S.: 54.00...55.00

Low-idle speed regulation

1/min: 325 Speed

Del. quantity cm3/

1000s.: 21.00...25.00

Del. quantity cm3/: 14.0

1000S.: (14)

Full-load speed regulation

1/min: 2050 Speed Charge press hPa: 1500

Del. quantity cm3/

1000s.: 57.00...63.00

Start:

1/min: 100

Del. quantity cm3/: 20.00...70.00

1000s.: 20.00 mind

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1800

hPa: 1500 Charge press

TD travel mm: 4.10...5.10 mm: (3.70...5.50)

1/min: 1500 3rd speed Charge press

hPa: 1500 mm: 3.30...3.70 TD travel mm: (2.80...4.20)

4th speed 1/min: 1100 hPa: 1500 Charge press

TD travel mm: 0.80...1.80 Del. quyntity cm3/: 81.50...82.50 mm: (0.40...2.20) 1000s.: (79.00...85.00) 5th speed 1/min: 1950 1/min: 1200 15th speed Charge press. hPa: 1500 Charge press. hPa: 1500 Cel. quantity cm3/: 83.50...88.50 1000s.: (82.50...89.50) 18th speed 1/min: 600 TD travel mm: 4.50...5.50 mm: (4.10...5,90) Supply-pump pressure characteristic: Charge press. hPa: -Del. quantity cm3/: 54.00...55.00 1000s.: (51.50...57.50) 20th speed 1/min: 800 1/min: 1950 1st speed Charge press. hPa: 1500 Supply-pump Charge press. hPa: 1500 bar: 9.20...9.80 Del. quantity cm3/: 92.50...99.50 pressure 2nd speed 1/min: 1500 1000s.: (91.00...101.00) Charge press. hPa: 1500 Supply-pump Mech. shutoff: bar: 7.70...8.30 Mech. Abstellung: pressure 4th speed 1/min: 800 Charge press. hPa: 1500 1st speed 1/min: 1950 Supply-pump Charge press. hPa: 1500 bar: 5.20...5.80 Del. quantity cm3/: 0.00...3.00 pressure 1000s.: (0.00...3.00) Overlow quantity at overflow valve: Shutoff electromagnet volt: -1st speed 1/min: 800 Charge press. hPa: 1500 Electr. shutoff: Overflow : 69.50...152.90 *quantity* cm3/10s: (54.50...167.90) 1st speed 1/min: 325 Del. quantity_cm3/: 0.00...3.00 1/min: 1950 2nd speed Charge press. hPa: 1500 1000s.: (0.00...3.00) : 97.30...180.70 cm3/1Gs: (102.30...195.70) Overflow Shutoff quantity electromagnet volt: 12 Delivery-quant. and breakaway char.: Idle delivery: 1st speed 1/min: 325 Del. quantity cm3/: 21.00...25.00 1nd speed 1/min: 800 Charge-air pressure-setting 1000s.: (18.00...28.00) hPa: 750 cm3/: 14 point Dispersion 1000S.: (14) 1/min: 580 LDA-stroke mm: 7.1 2nd speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 275 Del. quantity cm3/: 50.00...100.00 1000s.: (50.00...100.00) Charge press. hPa: 1500 Del. quantity cm3/: 0.00...25.00 1000s.: -5th speed 1/min: 2050 Charge press. hPa: 1500 Del. quantity cm3/: 57.00...63.00 1000S.: (52.00...68.00) 9th speed 1/min: 1950 Charge press. hPa: 1500 Del. quantity cm3/: 74.50...78.50 1/min: 400 2nd speed Del. quantity cm3/: 30.00...60.00 1000s.: (30.00...60.00) 1/min: 100 4th speed Del. quantity cm3/: 20.00...70.00 1000s.: (20.00...70.00) 1000s.: (73.00...80.00) 1/min: 1500 12th speed Shutoff electromagnet: Charge press. hPa: 1500

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: KF mm: MS mm: 0.8..1.2
SVS max. mm: 1.6
LDA stroke mm: 7.1
Ya mm: 37.2...39.2
Yb mm: 49.1...56.9

Remarks:

Operate control lever after each manifold pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Pushing electromagnet.

Always pay attention to test instructions for DISTRIBUTOR-TYPE INJECTION PUMPS FOR DI ENGINES!

Information additionally required for testing fuel-injection pump:

TEST PREREQUISITES
Calibrating-oil return temperature with thermometer, °C :55

Calibrating-oil inlet temperature, °C :42...47

Dwell speed, 1/min :1200 Feedback voltage, mV :-

SETTINGS/TEST SPECIFICATIONS FOR FUEL-INJECTION PUMP,

delivery rates

Test speed, 1/min :<500
Temperature stabilisation
speed 1/min :2000
Output temperature, °C :65
Measurement temperature, °C:61

Test speed, 1/min :500...799
Temperature stabilisation speed 1/min :2000
Output temperature, °C :61
Measurement temperature, °C:57

Test speed, 1/min :800...1199
Temperature stabilisation
speed 1/min :2000
Output temperature, *C :60
Measurement temperature, *C:56

Test speed, 1/min :1200...1700
Temperature stabilisation
speed 1/min :100
Output temperature, °C :53
Measurement temperature, °C:55

Test speed, 1/min : 1700
Temperature stabilisation
speed 1/min :100
Output temperature, °C :51
Measurement temperature, °C:53

Note inst. in remarks column

Test scheet : PEN Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1950L528 Type number : 0 460 426 219

Customer Part-No. :

Customer-specific information

Customer : PENTA

Engine : KAD

KW: 169 Power 1/min: 1950 Speed

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 110 assembly

Opening

bar: 250.00...253.00 Pressure

Perforated-plate

mn: 0.5 diameter

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery

mm: 0.3 Prestroke

(from BDC): +-0.02(0.04)

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Speed Charge press. hPa: 1500 Setting value mm: 3.20...3.60

Supply-pump pressure

Speed 1/min: 1500 Charge press hPa: 1500

Setting value bar: 8.30...8.90

Full-load del. with charge press.:

1/min: 1800 Speed Charge press. hPa: 1500

Del. quantity cm3/

1000s.: 92.00...93.00

cm3/: 5.0 Dispersion 1000s.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 600 Del. quantity cm3/

1000s.: 48.00...49.00

Low-idle speed regulation

Speed 1/min: 325

Del. quantity cm3/

1000s.: 7.00...11.00

Del. quantity cm3/: 5.00 1000s.: (5.0)

Full-load speed regulation

1/min: 2180 Speed Charge press hPa: 1500

Del. quantity cm3/

1000s.: 9.00...15.00

Start:

1/min: 100 Speed

Del. quantity cm3/: 40.00...90.00 mind 1000s.: 65.00

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1900 Charge press hPa: 1500

TD travel mm: 4.40...5.40 mm: (4.00...5.80)

1/min: 1500 3rd speed Charge press

hPa: 1500 mm: 3.20...3.60 TD travel mm: (2.70...4.10)

1/min: 1100

4th speed Charge press hPa: 1500

Del. quantity cm3/: 91.00...96.00 1000S.: (90.00...97.00) 9th speed 1/min: 1250 Charge press. hPa: 1500 Del. quantity cm3/: 86.50...91.50 1000S.: (85.50...92.50) 11th speed 1/min: 600 mm: 0.50...1.50 TD travel mm: (0.10...1.90) Supply-pump pressure characteristic: 1st speed 1/min: 1900 Charge press. hPa: 1500 Supply-pump Charge press. hPa: -Del. quantity cm3/: 48.00...49.00 1000s.: (45.50...51.50) bar: 9.40...10.00 pressure 2nd speed 1/min: 1500 Charge press. hPa: 1500 Supply-pump Mech. shutoff: bar: 8.30...8.90 Mech. Abstellung: pressure 3rd speed 1/min: 1100 1st speed 1/min: 1950 Charge press. hPa: 1500 Del. quantity cm3/: 0.00...3.00 Charge press. hPa: 1500 Supply-pump bar: 7.00...7.60 pressure 4th speed 1/min: 600 1000s.: (0.00...3.00) Charge press. hPa: 1500 Shutoff Supply-pump electromagnet volt: bar: 5.20...5.80 pressure Electr. shutoff: Overlow quantity at overflow valve: 1st speed 1/min: 325 1st speed 1/min: 800 Charge press. hPa: -Charge press. hPa: 1500 Del. quantity cm3/: 0.00...3.00 Overflow : 88.80...133.30 cm3/10s: (73.80...148.30) 1000s.: (0.00...3.00) quantity Shutoff 2nd speed 1/min: 1950 electromagnet volt: 12 Charge press. hPa: 1500 Overflow : 97.30...180.70 Idle delivery: cm3/10s: (82.30...195.70) quantity 1st speed 1/min: 325
Del. quantity cm3/: 7.00...11.00
1000S.: (4.00...14.00)
Dispersion cm3/: 5.0 Delivery-quant. and breakaway char.: 1nd speed 1/min: 800 1000s.: (5.0) Charge-air pressure-setting 1/min: 450 2nd speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) point hPa: 750 LDA-stroke mm: 7.5 Del. quantity cm3/: 65.00...66.00 1000s.: (61.50...69.50) Automatic starting fuel delivery: 2nd speed 1/min: 2300 Charge press. hPa: 1500
Del. quantity cm3/: 0.00...3.00
1000S.: (0.00...3.00)
4th speed 1/min: 2180 1st speed 1/min: 275
Del. quantity cm3/: 50.00...100.00
1000S.: (50.00...100.00) Charge press. hPa: 1500 Del. quantity cm3/: 9.00...15.00 1000s.: (4.00...20.00) 1/min: 400 2nd speed Del. quantity cm3/: 25.00...55.00 1000s.: (25.00...55.00) 1/min: 1950 5th speed 4th speed 1/min: 100 Del. quantity cm3/: 40.00...90.00 1000S.: (40.00...90.00) Charge press. hPa: 1500 Del. quantity cm3/: 88.50...92.50 1000s.: (87.00...94.00) 6th speed 1/min: 1800 Charge press. hPa: 1500 Del. quantity cm3/: 92.00...93.00 1000s.: (89.50...95.50) Shutoff electromagnet: Cut-in 8th speed 1/min: 1500 min voltage : 10.0 Charge press. hPa: 1500 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: KF mm: KOT
MS1 mm: 1.6...1.9
SVS max. mm: 1.9
LDA stroke mm: 751
Ya mm: 37.2...39.2
Yb mm: 53.6...61.4

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Pushing electromagnet.

Note inst. in remarks column

Test scheet : MWM Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1150R534 Type number : 0 460 426 220

Customer Part-No. :

Customer-specific information

Customer

Engine : TD 226-B6

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 110 assembly

Opening.

Pressure bar: 250.00...253.00

Perforated plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 900

Setting value mm: 2.10...2.30

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 900

Setting value bar: 6.80...7.40

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 900

Del. quantity cm3/ 1000s.: 68.00...69.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5)

Low-idle speed regulation

1/min: 325 Speed

Del. quantity cm3/ 1000s.: 10.00...16.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.5 1000s.: (6.5)

Full-load speed regulation

Speed 1/min: 1250

Del. quantity cm3/

1000s.: 37.00...43.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 79.00...82.00 V

1000s.: 72.00 mind

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1000

TD travel mm: 2.70...3.50 mm: (2.40...3.80)

Shutoff

electromagnet Volt: 12 3rd speed 1/min: 900

mm: 2.10...2.30 TD travel

mm: (1.70...2.70)

Shutoff

electromagnet Volt: 12 4th speed 1/min: 800

	0.801.60	Shutoff
fren :	(0.501.90)	electromagnet Volt: 12
Shutoff	1	Del. quantity cm3/: 63.0066.00
electromagnet volt:	12 +	1000s.: (61.5067.50)
9	1	9th speed 1/min: 1000
Supply-pump pressur	re characteristic:	Shutoff
and the state of the state of		electromagnet Volt: 12
1st speed 1/min:	1150	Del. quantity cm3/: 66.0068.00
Supply-pump	I	1000s.: (64.5070.50)
pressure bar:	7.708.30	12th speed 1/min: 900
Shutoff	7.700.50	
	12	Shutoff
electromagnet Volts		electromagnet Volt: 12
2nd speed 1/min:	700	Del. quyntity cm3/: 68.0069.00
Supply-pump	†	1000\$.: (66.0071.00)
	6.807.40	18th speed 1/min: 500
Shutoff	· •	Shutoff
electromagnet Volt:		electromagnet Volt: 12
3rd speed 1/min:	: 500 ∔	Del. quantity cm3/: 55.5061.50
Supply-pump	+	1000s.: (54.5062.50)
pressure bar:	5.506.10	
Shutoff	1	Mech. shutoff:
electromagnet Volt:	12	Mech. Abstellung:
o to o to o to to		neem hostettarg.
Overlow quantity at	overflou valve:	1st speed 1/min: 1150
over ton qualities at	T	Del. quantity cm3/: 0.003.00
1st speed 1/min:	500	40000 - 40.00 - 7.00\
Shutoff	500	1000s.: (0.003.00)
	12	Shutoff
electromagnet Volt	16 70 04 70	electromagnet volt: 12
	40.3084.70	
quantity cm3/10s:		Electr. shutoff:
2nd speed 1/min:	1150 +	
Shutoff	+	1st speed 1/min: 350
electromagnet Volt:	12 +	Del. quantity cm3/: 0.003.00
Cumfla		
Overstow	55.60139.00	1000s.: (0.003.00)
		1000s.: (0.003.00)
quantity cm3/10s:		1000S.: (0.003.00) Shutoff
quantity cm3/10s:	(40.60154.00)	1000s.: (0.003.00)
	(40.60154.00)	1000S.: (0.003.00) Shutoff electromagnet volt: -
quantity cm3/10s:	(40.60154.00)	1000S.: (0.003.00) Shutoff
quantity cm3/10s: Delivery-quant. and	(40.60154.00)	1000S.: (0.003.00) Shutoff electromagnet volt: - Idle delivery:
quantity cm3/10s: Delivery-quant. and 1nd speed 1/min:	(40.60154.00)	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350
quantity cm3/10s: Delivery-quant. and 1nd speed 1/min: Shutoff	(40.60154.00)	1000S:: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt:	(40.60154.00) breakaway char.:	1000S.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12
quantity cm3/10s: Delivery-quant. and 1nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/:	(40.60154.00) breakaway char.:	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00
quantity cm3/10s: Delivery-quant. and 1nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.	(40.60154.00)	1000S:: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00 1000S:: (6.5019.50)
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min:	(40.60154.00)	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00 1000s.: (6.5019.50) Dispersion cm3/: 3.5
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min: Shutoff	(40.60154.00) breakaway char.:	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min: Shutoff electromagnet Volt:	(40.60154.00) I breakaway char.: 1350 12 0.003.00 1300	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/:	(40.60154.00) I breakaway char.: 1350 12 0.003.00 12 0.003.00	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.:	(40.60154.00) I breakaway char.: 1350 12 0.003.00 12 0.003.00 (0.003.00)	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/:	(40.60154.00) I breakaway char.: 1350 12 0.003.00 12 0.003.00 (0.003.00)	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.:	(40.60154.00) I breakaway char.: 1350 12 0.003.00 12 0.003.00 (0.003.00)	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff	(40.60154.00) I breakaway char.: 1350 12 0.003.00 12 0.003.00 (0.003.00) 1260	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt:	(40.60154.00) breakaway char.: 1350 12 0.003.00 12 0.003.00 (0.003.00) 1260	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00 1000s.: (6.5019.50) Dispersion cm3/: 3.5 1000s.: (6.5) 2nd speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)
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quantity cm3/10s: Delivery-quant. and 1nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.:	(40.60154.00) breakaway char.: 1350 12 0.003.00 - 1300 12 0.003.00 (0.003.00) 1260 12 10.0040.00	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00 1000s.: (6.5019.50) Dispersion cm3/: 3.5 1000s.: (6.5) 2nd speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Automatic starting fuel delivery:
quantity cm3/10s: Delivery-quant. and 1nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 6th speed 1/min:	(40.60154.00) breakaway char.: 1350 12 0.003.00 - 1300 12 0.003.00 (0.003.00) 1260 12 10.0040.00	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00 1000s.: (6.5019.50) Dispersion cm3/: 3.5 1000s.: (6.5) 2nd speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Automatic starting fuel delivery: 1st speed 1/min: 300
quantity cm3/10s: Delivery-quant. and 1nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 6th speed 1/min: Shutoff Shutoff	(40.60154.00) breakaway char.: 1350 12 0.003.00	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00 1000s.: (6.5019.50) Dispersion cm3/: 3.5 1000s.: (6.5) 2nd speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Automatic starting fuel delivery: 1st speed 1/min: 300 Shutoff
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 6th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/:	(40.60154.00) breakaway char.: 1350 12 0.003.00	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00 1000s.: (6.5019.50) Dispersion cm3/: 3.5 1000s.: (6.5) 2nd speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Automatic starting fuel delivery: 1st speed 1/min: 300 Shutoff electromagnet Volt: 12
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 6th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/:	(40.60154.00) breakaway char.: 1350 12 0.003.00	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00
quantity cm3/10s: Delivery-quant. and Ind speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 2nd speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 5th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/: 6th speed 1/min: Shutoff electromagnet Volt: Del. quantity cm3/:	(40.60154.00) breakaway char.: 1350 12 0.003.00 - 1300 12 0.003.00 (0.003.00) 1260 12 10.0040.00 - 1250 12 37.0043.00 (31.5048.50)	1000s.: (0.003.00) Shutoff electromagnet volt: - Idle delivery: 1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0016.00 1000s.: (6.5019.50) Dispersion cm3/: 3.5 1000s.: (6.5) 2nd speed 1/min: 375 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) Automatic starting fuel delivery: 1st speed 1/min: 300 Shutoff electromagnet Volt: 12

1/min: 200 2nd speed

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 100.00...180.00

1000s .: -

1/min: 100 4th speed

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 79.00...81.00

1000s.: -

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

mm: 3.5...3.7 K KF mm: KOT mm: 0.9...1.3 MS SVS max. mm: 1.4 mm: 41.4...45.4 Ya

Yb mm: 40.6...46.4

Remarks:

Starting delivery check V = Speed-control lever in full-load position

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Permissible port/port scatter with stop test, mechanical = max. 5.0 ccm/1000 S.

Note inst. in remarks column

Test scheet : SOF Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1350R555 Type number : 0 460 426 227

Customer Part-No. :

Customer-specific information Customer : IVECO-FIAT

Engine : 8060.45.4485 "DI"

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 027

Opening

bar: 250.00...253.00 Pressure

Perforated plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing device travel

1/min: 1000 Speed Charge press. hPa: 1000

Setting value mm: 1.90...2.30

Shutoff

electromagnet Volt: 24

Supply-pump pressure

1/min: 1100 Speed Charge press hPa: 1000 Setting value bar: 7.00...7.60

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

1/min: 700 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 75.50...76.50

Shutoff

clectromagnet Volt: 24 Dispersion cm3/: 3.5 1000s.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

1000s.: 47.00...48.00

Shutoff

electromagnet Volt: 24

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

1000s.: 14.00...18.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 4.0 1000s.: (5.0)

Full-load speed regulation

Speed 1/min: 1475 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 44.00...50.00

Shutoff

electromagnet Volt: 24

Start:

Speed 1/min: 100 Del. quantity cm3/: 60.00...110.00 mind 1000s.: 60.00

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1200 Charge press hPa: 1000 TD travel mm: 3.804.60	+ Charge-air pressure-setting + point hPa: 450 + Shutoff
mm: (3.504.90) Shutoff	electromagnet Volt: 24 Del. quantity cm3/: 66.0067.00
electromagnet Volt: 24 3rd speed 1/min: 1000 Charge press hPa: 1000	1000s: (62.5070.50) - 2nd speed 1/min: 1550 - Charge press. hPa: 1000
TD travel mm: 1.902.30 mm: (1.402.80)	Shutoff electromagnet Volt: 24
Shutoff electromagnet Volt: 24	+ Del. quantity cm3/: 0.003.00 + 1000s: (0.003.00)
4th speed 1/min: 900 Charge press hPa: 1000 TD travel mm: 0.501.30	5th speed 1/min: 1450 Charge press. hPa: 1000
TD travel mm: 0.501.30 mm: (0.201.60)	+ Shutoff + electromagnet Volt: 24 + Del. quantity cm3/: 59.0071.00
electromagnet Volt: 24	1000S: (57.0073.00) + 8th speed 1/min: 1475
Supply-pump pressure characteristic:	Charge press. hPa: 1000 Shutoff
1st speed 1/min: 600 Charge press. hPa: 1000 Supply-pump	+ electromagnet Volt: 24 + Del. quantity cm3/: 44.0050.00 + 1000s.: (41.0053.00)
pressure bar: 4.705.30 Shutoff	+ 9th speed 1/min: 1350 + Charge press. hPa: 1000
electromagnet Volt: 24 2nd speed 1/min: 1000 Charge press. hPa: 1000	<pre>f Shutoff electromagnet Volt: 24 Del. quantity cm3/: 68.5071.50</pre>
Supply-pump pressure bar: 7.007.60	1000S.: (66.5073.50) 10th speed 1/min: 1200
Shutoff electromagnet Volt: 24 3rd speed 1/min: 1350	Charge press. hPa: 1000 Shutoff
Charge press. hPa: 1000 Supply-pump	+ electromagnet Volt: 24 + Del. quantity cm3/: 69.5073.50 + 1000S.: (68.0075.00)
pressure bar: 8.809.40 Shutoff	+ 12th speed 1/min: 700 + Charge press. hPa: 1000
Overlow quantity at overflow valve:	Shutoff electromagnet Volt: 24 Del. quyntity cm3/: 75.5076500
1st speed 1/min: 600	1000S.: (72.5079.50) 13th speed 1/min: 600
Charge press. hPa: 1000 Shutoff electromagnet Volt: 24	Charge press. hPa: - Shutoff
Overflow : 69.50152.90 quantity cm3/10s: (54.50167.90)	+ electromagnet Volt: 24 + Del. quantity cm3/: 44.0048.00 + 1000s.: (42.0050.00)
2nd speed 1/min: 1350 Charge press. hPa: 1000 Shutoff	14th speed 1/min: 600 Charge press. hPa: 1000 Shutoff
electromagnet Volt: 24 Overflow: 97.30180.70	+ electromagnet Volt: 24 + Del. quantity cm3/: 76.5080.50
quantity cm3/10s: (82.30195.70) Delivery-quant. and breakaway char.:	1000s.: (75.0082.00) + 15th speed 1/min: 500 + Charge press. hPa: -
	+ Shutoff + electromagnet Volt: 24
1nd speed 1/min: 600	+ Del. quantity cm3/: 47.0048.00 + 1000s.: (44.0051.00)

Mech. shutoff: Mech. Abstellung:

1st speed 1/min: 1350 Charge press. hPa: 1000

Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00)

Shutoff

electromagnet volt: 24

Electr. shutoff:

1/min: 350 1st speed Charge wess. hPa: -

Del. quantity cm3/: 0.00...3.00 1090s.: (0.00...3.00)

Shutoff

electromagnet volt: -

Idle delivery:

1/min: 350 1st speed

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 14.00...18.00 1000s.: (11.00...21.00)

Dispersion cm3/: 4.0 1000s.: (5.0)

1/min: 400 2nd speed

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 0.00...3.00

1000s.: (0.00...3.00)

Automatic starting fuel delivery:

1/min: 130 1st speed

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 60.00...110.00 1000s.: (60.00...110.00)

1/min: 250 2nd speed

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 40.00...60.00 1000s.: (40.00...60.00)

1/min: 100 4th speed

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 60.00...110.00 1000s.: (60.00...110.00)

Shutoff electromagnet:

Cut-in

: 20.0 min voltage Rated voltage : 24.0 Mounting and assembly dimensions:

Designation

mm: 3.5...3.7 K KF mm: KOT mm: 1.2...1.5 mm: 37.9...39.9 mm: 39.3...44.7 MS1 Ya Yh

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Note inst. in remarks column

Test scheet : PER : 02.94 Edition

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1250R556 Type number : 0 460 426 228

Customer Part-No. :

Customer-specific information Customer : PERKINS

Engine : Q20 Phaser 210Ti

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 44.00...46.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 027

Opening

bar: 250.00...253.00 Pressure

Perforated plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000 Charge press. hPa: 1500

Setting value mm: 1.50...1.70

Shutoff

electromagnet Volt: 24

Supply-pump pressure

Speed 1/min: 1000

Charge press hPa: 1500 Setting value bar: 7.20...7.80

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

1/min: 900 Charge press. hPa: 1500

Del. quantity cm3/

1000s.: 93.50...94.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 5.0 1000s.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/

1000S.: 56.00...57.00

Shutoff

electromagnet Volt: 24

Low-idle speed regulation

Speed 1/min: 280

Del. quantity cm3/

1000s.: 9.00...13.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 6.5 1000s.: (6.5)

Full-load speed regulation

1/min: 1400 Speed Charge press hPa: 1500

Del. quantity cm3/

1000S.: 42.00...48.00

Shutoff

electromagnet Volt: 24

Start:

Speed 1/min: 100 Del. quantity cm3/: 130.00...190.00

mind 1000s.: 130.0

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 1100 Charge press hPa: 1500 TD travel mm: 2.102.70	Charge-air pressure-setting point hPa: 700 Shutoff
mm: (1.703.10) Shutoff	electromagnet Volt: 24 Del. quantity cm3/: 81.0082.00
electromagnet Volt: 24	10005.: (78.0085.00)
3rd speed 1/min: 1000	+ 2nd speed 1/min: 1480
Charge press hPa: 1500	+ Charge press. hPa: 1500
TD travel mm: 1.501.70	+ Shutoff
mm: (1.002.20) Shutoff	+ electromagnet Volt: 24 + Del. quantity cm3/: 0.003.00
electromagnet Volt: 24	10008: (0.003.00)
4th speed 1/min: 900	+ 5th speed 1/min: 1400
Charge press hPa: 1500	+ Charge press. hPa: 1500
TD travel mm: 0.401.00 mm: (0.001.40)	+ Shutoff
Shutoff	electromagnet Volt: 24 Del. quantity cm3/: 42.0048.00
electromagnet Volt: 24	10008:: (39.0051.00)
	+ 8th speed 1/min: 1350
Supply-pump pressure characteristic:	+ Charge press. hPa: 1500
1-t	+ Shutoff
1st speed 1/min: 1250 Charge press. hPa: 1500	electromagnet Volt: 24
Supply-pump	+ Del. quantity cm3/: 65.0095.00 + 1000S.: (65.0095.00)
pressure bar: 8.208.30	+ 9th speed 1/min: 1250
Shutoff	- Charge press. hPa: 1500
electromagnet Volt: 24	+ Shutoff
2nd speed 1/min: 1000	electromagnet Volt: 24
Charge press. hPa: 1500 Supply—pump	+ Del. quantity cm3/: 100.00105.00 + 1000S.: (99.00106.00)
pressure bar: 7.207.80	12th speed 1/min: 900
Shutoff	+ Charge press. hPa: 1500
electromagnet Volt: 24	+ Shutoff
3rd speed 1/min: 700 Charge press. hPa: 1500	+ electromagnet Volt: 24
Charge press. hPa: 1500 Supply-pump	Del. quyntity cm3/: 93.5094.50 1000s.: (90.5097.50)
pressure bar: 6.106.70	18th speed 1/min: 500
Shutoff	+ Charge press. hPa: -
electromagnet Volt: 24	+ Shutoff
Overland automobiles at avantian column	electromagnet Volt: 24
Overlow quantity at overflow valve:	Del. quantity cm3/: 56.0057.00 1000s.: (53.0060.00)
1st speed 1/min: 500	20th speed 1/min: 700
Charge press. hPa: -	Charge press. hPa: 1500
Shutoff	+ Shutoff
electromagnet Volt: 24	electromagnet Volt: 24
Overflow : 41.7086.10 quantity cm3/10s: (26.70101.10)	+ Del. quantity cm3/: 92.5098.50 + 1000s.: (91.5099.50)
2nd speed 1/min: 1250	10003 (71.3077.307
Charge press. hPa: 1500	+ Mech. shutoff:
Shutoff	+ Mech. Abstellung:
electromagnet Volt: 24	† 4. 44. 4050
Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00)	† 1st speed 1/min: 1250 † Charge press. hPa: 1500
40400119 00071032 (40.00.1.134.00)	+ Del. quantity cm3/: 0.003.00
Delivery quant. and breakaway char.:	1000s.: (0.003.00)
•	+ Shutoff
1nd chood 1/min. 700	electromagnet volt: 24
1nd speed 1/min: 700	f Flectr shutoff:

1st speed 1/min: 280 Charge press. hPa: -

Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00)

Shutoff

electromagnet volt: -

Idle delivery:

1st speed 1/min: 280

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 9.00...13.00 1000s.: (5.**G**0...17.00)

Dispersion cm3/: 6.5

1000s.: (6.5) 1/min: 400 2nd speed

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00)

3rd speed 1/min: 300

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 1.00...9.00

1000s.: (0.00...10.00)

Automatic starting fuel delivery:

1st speed 1/min: 130

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 130.00...190.00

1000s.: (130.00...190.00)

2nd speed 1/min: 230

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 50.00...90.00 1000s.: (50.00...90.00)

1/min: 100 4th speed

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 130.00...190.00

1000s.: (130.00...190.00)

Shutoff electromagnet:

Cut-in

min voltage : 20.0 : 24.0 Rated voltage

Mounting and assembly dimensions:

Designation

K mm: 3.6...3.8

KF mm: KOT MS1 mm: 1.4...1.7

LOZ

mm: 37.2...39.2 Ya mm: 44.9...53.5 Yb

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control

lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control

lever on distributor-head end

Operate control lever after each manifold-pressure compensator pressure change.

Note inst. in remarks column

Test scheet : SOF Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1350R559 Type number : 0 460 426 229

Customer Part-No. :

Customer-specific information Customer : IVECO-FIAT

: 8060.45.4385 "DI" Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 027

Opening

Pressure bar: 250.00...253.00

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Lenath mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1000 Charge press. hPa: 1000

mm: 1.40...1.60 Setting value

Shutoff

electromagnet Volt: 24

Supply-pump pressure

Speed 1/min: 1000 Charge press hPa: 1000

Setting value bar: 6.60...7.20

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

1/min: 700 Charge press. hPa: 1000

Del. quantity cm3/

10**60**\$.: 61.00...62.00

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 3.5 1000s.: (5.0)

Full-load del. w/out charge press.:

Speed 1/min: 500

Del. quantity cm3/ 1000s.: 56.00...57.00

Shutoff

electromagnet Volt: 24

Low-idle speed regulation

1/min: 350

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 4.0

Full-load speed regulation

Speed 1/min: 1500 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 41.00...47.00

Shutoff

electromagnet Volt: 24

Start:

1/min: 100

Del. quantity cm3/: 60.00...110.00

mind 1000s.: 60.00

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

3rd speed 1/min: 1100 +	Charge-air pressure-setting
Charge press hPa: 1000	point hPa: 150
TD travel mm: 2.403.00	Shutoff
mn: (2.003.40)	electromagnet Volt: 24
Shutoff	Del. quantity cm3/: 62.5063.50
electromagnet Volt: 24	1000s.: (59.0067.00)
4th speed 1/min: 1000 +	2nd speed 1/min: 1630
Charge press hPa: 1000	Charge press. hPa: 1000
TD travel mm: 1.401.60	Shutoff
mm: (0.802.20)	electromagnet Volt: 24
Shutoff	Del. quantity cm3/: 0.003.00
electromagnet Volt: 24	10008.: (0.003.00)
5th speed 1/min: 1350	5th speed 1/min: 1500
Charge press. hPa: 1000	Charge press. hPa: 1000
TD travel mm: 4.605.20	Shutoff
mm: (4.205.60)	electromagnet Volt: 24
Shutoff +	Del. quantity cm3/: 41.0047.00
electromagnet Volt: 24	1000s.: (36.0052.00)
Complex many management of the control of the	8th speed 1/min: 1450
Supply-pump pressure characteristic:	Charge press. hPa: 1000
1st spend 1/sig. 500	Shutoff
1st speed 1/min: 500	electromagnet Volt: 24
Charge press. hPa: 1000	Del. quantity cm3/: 47.0063.00
Supply-pump +	1000s.: (45.0065.00)
pressure bar: 3.804.40	9th speed 1/min: 1350
Shutoff	Charge press. hPa: 1000
electromagnet Volt: 24	Shutoff
2nd speed 1/min: 1000	electromagnet Volt: 24
Charge press. hPa: 1000	Del. quantity cm3/: 57.0060.00
Supply-pump +	1000\$.: (55.0062.00)
pressure bar: 6.607.20	10th speed 1/min: 1000
Shutoff +	Charge press. hPa: 1000
electromagnet Volt: 24	Shutoff
3rd speed 1/min: 1350	electromagnet Volt: 24
Charge press. hPa: 1000	Del. quantity cm3/: 59.5063.50
Supply-pump + 2 50 0.10	10005.: (58.0065.00)
pressure bar: 8.509.10	12th speed 1/min: 500
Shutoff	Charge press. hPa: 1000
electromagnet Volt: 24	Shutoff
Overlow quantity at overflow valve:	electromagnet Volt: 24
overlow quantity at overtion valve:	Del. quyntity cm3/: 63.5067.50
1st speed 1/min: 500 I	1000\$.: (62.0069.00)
	18th speed 1/min: 500
Charge press. hPa: 1000	Charge press. hPa: -
	Shutoff
electromagnet Volt: 24 Overflow : 69.50152.90	electromagnet Volt: 24
quantity cm3/10s: (54.50167.90)	Del. quantity cm3/: 56.0057.00
2nd speed 1/min: 1350	1000s.: (53.0059.00)
	Nach about 66.
Charge press. hPa: 1000	Mech. shutoff:
	Mech. Abstellung:
electromagnet Volt: 24 Overflow : 97.30180.70	1st speed 1/min- 1750
quantity cm3/10s: (82.30195.70)	1st speed 1/min: 1350
quarterly (111)/105. (02.30193.70)	Charge press. hPa: 1000
Delivery-quant and heart augus chan	Del. quantity cm3/: 0.003.00
Delivery—quant. and breakaway char.:	1000s.: (0.003.00)
†	Shutoff
1nd speed 1/min: 500	electromagnet volt: 24
Thu speed 1/8/11, 500	Electr. shutoff:
	ELECT. SHULOTT:

1st speed 1/min: 350 Charge press. hPa: Del. quantity cm3/: 0.00...3.00

1**000**S.: (0.00...3.00)

Shutoff

electromagnet volt: -

Idle delivery:

1/min: 350 1st speed

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 10.00...14.00 1000s.: (7.00...17.00)

cm3/: 4.0Dispersion 1000s.: (5.0)

2nd speed 1/min: 425

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00

1000s.: (0.00...3.00)

Automatic starting fuel delivery:

1st speed 1/min: 130

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 60.00...110.00 1000s.: (60.00...110.00)

2nd speed 1/min: 250

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 45.00...75.00

1**000**S.: (45.00...75.00)

4th speed 1/min: 100

Shutoff

electromagnet Volt: 24

Del. quantity cm3/: 60.00...110.00

1000s.: (60.00...110.00)

Shutoff electromagnet:

Cut-in

: 20.0 min voltage : 24.0 Rated voltage

Mounting and assembly dimensions:

Designation

mm: 3.5...3.7 K KF mm: KOT mm: 1.2...1.4 mm: 37.9...39.9 MS1

Ya mm: 42.3...46.5 Yb

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed

Measurement point = edge of control

lever on distributor-head end

Note inst. in remarks column

Test scheet : SOF Edition : 02.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1350R561 Type number : 0 460 426 230

Customer Part-No. :

Customer—specific information Customer : IVECO-FIAT

: 8060.45.4385 "DI" Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 344

Calibrating-oil return temp.

with thermometer : 54.00...56.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly

Opening

Pressure bar: 250.00...253.00

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery Prestroke mn: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1100 Speed Charge press. hPa: 1000

Setting value mm: 2.60...2.80

Shutoff

electromagnet Volt: 24

Supply-pump pressure

1/min: 1100 Speed

Charge press hPa: 1000 Setting value bar: 7.90...8.50

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

1/min: 700 Charge press. hPa: 1000

Del. quantity cm3/ 1000s.: 65.00...66.00

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 3.5 1000s.: (5.0)

Full-load del. w/out charge press.:

1/min: 500 Speed

Del. quantity cm3/

1000s.: 43.00...49.0G

Shutoff

electromagnet Volt: 24

Low-idle speed regulation

Speed 1/min: 350

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 4.0 1000s.: (5.0)

Full-load speed regulation

Speed 1/min: 1500 Charge press hPa: 1000 Del. quantity cm3/

1000s.: 37.00...43.00

Shutoff

electromagnet Volt: 24

Start:

1/min: 100 Speed

Del. quantity cm3/: 60.00...110.00

1000s.: 60.00 mind

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

	1100 1000 2.602.80	‡	Charge-air pressure point hPa: Shutoff	
	(2.003.40)	İ	electromagnet Volt: Del. quantity cm3/:	
electromagnet Volt:	24	I		(57.0065.00)
4th speed 1/min:		1	2nd speed 1/min:	
	1000	1	Charge press. hPa:	
	1.201.80	1	Shutoff	1000
	(0.802.20)	1	electromagnet Volt:	24
Shutoff		1	Del. quantity cm3/:	
electromagnet Volt:	24	1		(0.003.00)
5th speed 1/min:		1	5th speed 1/min:	
	1000	+	Charge press. hPa:	
	4.605.20	+	Shutoff	
	(4.205.60)	+	electromagnet Volt:	24
Shutoff	•	+	Del. quantity cm3/:	37.0043.00
electromagnet Volt:	24	+	1000s.:	(32.0048.00)
-		+	8th speed 1/min:	
Supply-pump pressur	e characteristic:	+	Charge press. hPa:	1000
		+	Shutoff	
1st speed 1/min:		+	electromagnet Volt:	24
Charge press. hPa:	1000	+	Del. quantity cm3/:	
Supply-pump		+		(43.0063.00)
pressure bar:	5.205.80	+	9th speed 1/min:	1350
Shutoff		+	Charge press. hPa:	1000
electromagnet Volt:		+	Shutoff	
2nd speed 1/min:		+	electromagnet Volt:	24
Charge press. hPa:	1000	+	Del. quantity cm3/:	
Supply-pump		+	1000s.:	(55.0062.00)
	7.908.50	+	10th speed 1/min:	1200
Shutoff		+	Charge press. hPa:	1000
electromagnet Voit:		+	Shutoff	
3rd speed 1/min:		+	electromagnet Volt:	
	1000	+	Del. quantity cm3/:	
Supply-pump		+		(58.0065.00)
	9.4010.00	+	12th speed 1/min:	
Shutoff		+	Charge press. hPa:	1000
electromagnet Volt:	24	+	Shutoff	
0 1		†	electromagnet Volt:	
Overlow quantity at	overflow valve:	+	Del. quyntity cm3/:	
4-4	(00	†		(62.0069.00)
1st speed 1/min:		†	18th speed 1/min:	
Charge press. hPa:	1000	†	Charge press. hPa:	-
Shutoff	3/	†	Shutoff	24
electromagnet Volt: Overflow :		†	electromagnet Volt:	
	69.50152.90	†	Del. quantity cm3/:	
quantity cm3/10s:		†		(45.0052.00)
2nd speed 1/min:		†	20th speed 1/min:	
Charge press. hPa: Shutoff	1000	T	Charge press. hPa:	1000
electromagnet Volt:	2/.	T	Shutoff	2/.
Overflow :	97.30180.70	Ι	electromagnet Volt:	
quantity cm3/10s:		Ι	Del. quantity cm3/:	(65.0072.00)
quarterly (III) (US:	(02.30173.10)	Ι	10005.:	(0).00(2.00)
Delivery-quant. and	breakaway char.:	Ŧ	Mech. shutoff:	
		+	Mech. Abstellung:	
And an and At 1	.	+		47070
1nd speed 1/min:	000	†	1st speed 1/min:	
		+	Charge press. hPa:	1000

Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: 24 Electr. shuroff: 1st speed 1/min: 350 Charge press. hPa: Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1/min: 350 1st speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 10.00...14.00 1000s.: (7.00...17.00) cm3/: 4.0 Dispersion 1000s.: (5.0) 2nd speed 1/min: 425 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 1/min: 375 3rd speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 2.00...8.00 1000S.: (0.00...10.00) Automatic starting fuel delivery: 1st speed 1/min: 130 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 60.00...110.00 1000s.: (60.00...110.00) 1/min: 250 2nd speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 25.00...55.00 1000s.: (25.00...55.00) 1/min: 100 4th speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 60.00...110.00 1000s.: (60.00...110.00) Shutoff electromagnet:

Mounting and assembly dimensions:

Designation

K mm: 3.5...3.7 KF mm: KOT MS1 nm: 1.5...1.8 Ya mm: 37.9...39.9 Yb mm: 42.5...47.7

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Cut-in

min voltage

Rated voltage

: 20.0 : 24.0

Note inst. in remarks column

Test scheet : PEU Edition : 03.94

replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/8F25JGR311 Type number : 0 460 484 016

Customer Part-No. :

Customer-specific information

Customer : PSA

Engine : TUD3

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp. °C

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 022

Openina

Pressure bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery
Prestroke mm: (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Setting value mm: 3.60...4.00

AFB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 4.70...5.30

KSB/AFŘ

valve Volt: 12

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1500

Del. quantity cm3/

1000s.: 20.50...21.50 cm3/: 2.0

Dispersion cm3/: 2.0 10003:: (3.0)

Low-idle speed regulation

Speed 1/min: 375 Del. quantity cm3/

1000s.: 5.00...7.00

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12 Dei. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

Speed 1/min: 550

Del. quantity cm3/

1000s.: 1.50...2.50

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2625

Del. quantity cm3/

1000s.: 15.00...19.00

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 32.00...58.00

mind 1000s.: 32.00

KSB/AFB

Valve Volt: 12

Shutoff

electromagnet Volt: 12

Inspection pump test specifications

##=# 1. #		+ valve Volt: 12
Timing-device chara	cteristic:	Shutoff
2nd speed 1/min:	2000	electromagnet Volt: 12
	7.007.80	4th speed 1/min: 500
	(6.708.10)	+ Supply-pump + pressure bar: 3.605.20 A
KSB/AFB	(3.73	+ KSB/AFB
valve Volt:	12	valve Volt: -
Shutoff		+ Shutoff
electromagnet Volt:	12	+ electromagnet Volt: 12
3rd speed 1/min:	1250	+
	3.604.00	Overlow quantity at overflow valve:
	(3.104.50)	
KSB/AFB	4.0	1st speed 1/min: 500
valve Volt:	12	KSB/AFB
Shutoff	13	+ valve Volt: 12
electromagnet Volt:		+ Shutoff
4th speed 1/min:		electromagnet Volt: 12
TD travel mm:	1.302.10 (1.002.40)	+ Overflow : 41.7083.40
KSB/AFB	(1.002.40)	quantity cm3/10s: (27.8097.30)
valve Volt:	12	2nd speed 1/min: 2450
Shutoff	12	+ KSB/AFB + valve Volt: 12
electromagnet Volt:	12	+ valve Volt: 12 + Shutoff
8th speed 1/min:		electromagnet Volt: 12
	4.005.00 B	+ Overflow : 55.60152.90
	(3.305.70) B	quantity cm3/10s: (41.70167.90)
KSB/AFB	(3,33,13,13,13,13,13,13,13,13,13,13,13,13	40011119 1103. (41.101.101.101
valve Volt:	-	Delivery-quant. and breakaway char.:
Shutoff		- Control of dealers and Dreamay enter the
electromagnet Volt:	12	+
9th speed 1/min:	500	3rd speed 1/min: 2775
	2.603.60 A	+ KSB/AFB
	(1.904.30) A	+ valve Volt: 12
KSB/AFB		+ Shutoff
valve Volt:	-	+ electromagnet Volt: 12
Shutoff		+ Del. quantity cm3/: 3.009.00
electromagnet Volt:	12	1000s.: (0.0012.00)
Summer land and a summer land		5th speed 1/min: 2625
Supply-pump pressur	e characteristic:	KSB/AFB
1st speed 1/min:	500	+ valve Volt: 12
	300	+ Shutoff
Supply-pump pressure bar:	2.903.50	electromagnet Volt: 12
KSB/AFB	2.903.30	Del. quantity cm3/: 15.0019.00
valve Volt:	12	1000s.: (13.0021.00) 9th speed 1/min: 2450
Shutoff	12	+ 9th speed 1/min: 2450 + KSB/AFB
electromagnet Volt:	12	Volt: 12
2nd speed 1/min:		Shutoff
Supply-pump	1250	electromagnet Volt: 12
	4.705.30	Del. quantity cm3/: 20.0022.00
KSB/AFB	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	1000s.: (18.8023.20)
valve Volt:	12	12th speed 1/min: 1500
Shutoff	-	KSB/AFB
electromagnet Volt:	12	valve Volt: 12
3rd speed 1/min:		Shutoff
Supply-pump		electromagnet Volt: 12
	7.508.10	Del. quyntity cm3/: 20.5021.50
		1000s.: (18.8023.20)

20th speed 1/min: 500 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 18.30...21.30 1000s.: (16.80...22.80) Mech. shutoff: Electr. shutoff: 1st speed 1/min: 375 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) KSB/AFB valve Volt: 12 Damper set qty.: LFG-setting: solidale con carcassa: Idle delivery: 1/min: 375 1st speed KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 5.00...7.00 1000s.: (2.00...10.00) High Idle: 1st speed 1/mi: 475 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 5.00...7.00 1000S.: (2.00...10.00) Residual: 1.Rotacao 1/min: 550 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 1.50...2.50 1000s.: (0.00...4.00) Automatic starting fuel delivery: 1/min: 200 1st speed

Volt: 12

electromagnet Volt: 12

Del. quantity cm3/: 36.00...70.00 1000s.: (36.00...70.00) 2nd speed 1/min: 300 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.00...30.00 1000s.: (10.00...30.00) 1/min: 100 4th speed KSB/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 Del. quantity cm3/: 32.00...58.00 1000S.: (32.00...58.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 K **KF** mm: 5.6...6.0 MS mm: 1.1...1.5 Ya mm: 36.2...38.2 mm: 48.5...59.5 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

A = KSB adjustment point B = KSB curve point

KSB/AFB

valve Shutoff

Note inst. in remarks column

Test scheet : VWW Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/8F220GR337-4 Type number : 0 460 484 035

Customer Part-No. :

Customer-specific information

Customer : SEAT

Engine : 1.9L SD Klima

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Openina

Pressure bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250

Setting value mm: 3.10...3.50

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250 Speed

Setting value bar: 5.50...6.10

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1250

Del. quantity cm3/

1000s.: 35.50...36.50 cm3/: 2.0

Dispersion

1000s.: (3.0)

Low-idle speed regulation

Speed 1/min: 450

Del. quantity cm3/ 1000s.: 7.00...9.00

Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

Speed 1/min: 575

Del. quantity cm3/

1000s.: 2.00...3.00

Shutoff

electromagnet Volt: 12

Full-load speed regulation

1/min: 2525 Speed

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 35.00...75.00 mind 1000s.: 35.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1250

Inj.-aty. cm3/

difference 1000S.: -5.00...-11.0 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1/min: 1250 1.Speed

TD-travel

difference mm: -0.30..-0.5 #

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 5th speed 1/min: 2525 Inspection-pump test specifications Test specifications in parentheses 5th speed Shutoff Timing-device characteristic: electromagnet Volt: 12 Del. quantity cm3/: 10.00...14.00 1000s.: (8.00...16.00) 1/min: 2425 2nd speed 1/min: 2200 mm: 7.10...7.90 TD travel 8th speed mm: (6.80...8.20) Shutoff Shutoff electromagnet Volt: 12 Uel. quantity cm3/: 18.C0...28.C0 1000s.: (17.00...29.00) 9th speed 1/min: 2200 electromagnet Volt: 12 3rd speed 1/min: 1250 mm: 3.10...3.50 mm: (2.60...4.00) TD travel 9th speed Shutoff electromagnet Volt: 12
Del. quantity cm3/: 31.00...33.00
1000s.: (29.80...34.20)
12th speed 1/min: 1250 Shutoff electromagnet Volt: 12 4th speed 1/min: 750 TD travel mm: 1.10...1.90 mm: (0.80...2.20) Shutoff Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Shutoff 1/min: 750 1st speed Supply-pump bar: 4.30...4.90 pressure Shutoff electromagnet Volt: 12 Shutoff 1/min: 1250 electromagnet Volt: 12 Del. quantity cm3/: 27.50...32.50 2nd speed Supply-pump bar: 5.50...6.10 pressure 1000s.: (25.00...35.00) Shutoff electromagnet Volt: 12 Mech. shutoff: 3rd speed 1/min: 2200 Supply-pump Electr. shutoff: bar: 7.70...8.30 pressure Shutoff 1/min: 450 1st speed Del. quantity cm3/: 0.00...3.00 electromagnet Volt: 12 1000s.: (0.00...3.00) Overlow quantity at overflow valve: Shutoff electromagnet volt: -1/min: 750 1st speed Shutoff Damper set qty.: electromagnet Volt: 12 : 41.70...86.10 Overflow LFG-setting: cm3/10s: (26.70...101.10) 1/min: 2200 quantity solidale con carcassa: Idle delivery: 2nd speed Shutoff electromagnet Volt: 12 1/min: 450 1st speed : 55.60...152.90 Overflow Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.00...9.00 1000S.: (4.00...12.00) cm3/10s: (41.60...167.90) quantity Delivery-quant. and breakaway char.: High Idle: 1/min: 2700 2nd speed Shutoff 1/mi: 500 1st speed electromagnet Volt: 12 Shutoff electromagnet Volt: 12

Del. quantity cm3/: 7.00...9.00 1**000**\$.: (4.**0**0...12.00) Residual: 1.Rotacao 1/min: 575 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.00...3.00 1000s.: (0.50...4.50) 2nd speed 1/min: 525 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.50...4.50 1000s.: (1.00...6.00) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1250 1st speed Inj.-qty. cm3/ : 0.0...+3.0 Z" difference 1000s.: -TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 : -0.8...-1.2 " TD-travel mm: (-0.5...-1.5) " difference Shutoff electromagnet Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump-: -0.50..-0.90" pressure difference bar: (-0.3...-1.1) " Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...75.00

1000s.: (35.00...75.00)

2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 18.00...38.00 1000s.: (18.00...38.00)

4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...75.00 1000s.: (35.00...75.00)

Shutoff electromagnet:

Cut-in min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation K mm: 3.2...3.4 KF mm: 5.1...5.5 MS mm: 1.1...1.5 SVS max. mm: 4.6 mm: 37.6...41.6 Ya mm: 49.9...63.3 Yb

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Z = Absolute delivery

Note inst. in remarks column

Test scheet : FIA Edition : 02.94 : 10.04.92 replaces Calibrating oil : ISO-4113

Injection pump : VE4/8F2300R463 Type number : 0 460 484 051 Customer Part-No. :

Customer-specific information

Engine : M708 BA/FA 17.L

: FIAT-AUTO

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating rozzle-holder

: 1 688 901 022 assembly

Opening

Customer

bar: 130.00...133.00 Pressure

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery Prestroke mn: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500

Setting value mm: 5.10...5.50

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1500

Setting value bar: 5.30...5.90

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1500

Del. quantity cm3/

1000s.: 28.80...29.80

Shutoff

electromagnet Volt: 12 cm3/: 2.5 Dispersion 1000s.: (3.0)

Low-idle speed regulation

Speed 1/min: 450

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2500

Del. quantity cm3/

1000s.: 17.00...23.00

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 37.00...63.00

1000s.: 37.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1500 Speed

Inj.-qty. cm3/

difference 1000s.: -7.00...-13.0 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1/min: 1500 1.Speed

TD-travel

difference mm: -0.70..-0.9 #

Shutoff

electromagnet Volt: 12

Inspection pump test specifications Test specifications in parentheses

Inimig-device characteristic:					
2nd speed 1/min: 200	Timing-device char	acteristic:	+	electromagnet Volt:	12
To travel mm: 8.609.40 mm: (8.309.70) Shutoff Shut			+	Del. quantity cm3/:	0.001.60
Shutoff electromagnet Volt: 12 Del. quantity cm3/: 1.009.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 1.009.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 1.0023.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 17.0023.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 29.9032.30 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 29.9032.30 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 29.9032.30 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 29.9033.60 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 29.9033.60 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.8029.80 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.8031.20 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.8031.20 Del. quantit	2nd speed 1/min	i: 2300	+		
Shuttoff dectromagnet Volt: 12 Dectromagnet Volt			+		2700
Shutoff Shut		n: (8.309. 70)	+		
Sign 1/min 1500			+	electromagnet Volt:	12
Shutoff Shut			+	Del. quantity cm3/:	1.009.00
## Shutoff electromagnet Volt: 12 4th speed 1/min: 800 1D travel mm: 1.60,2.40 ## Shutoff electromagnet Volt: 12 ##			+		
Shutoff electromagnet Volt: 12 Del. quantity cm3/: 17.0023.00 To travel mm: 1.602.40 mm: (1.102.90) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 23.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 29.9032.30 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 29.9032.30 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8033.60 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8033.60 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8029.80 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8031.20 Shutoff elec			+	5th speed 1/min:	2500
electromagnet Volt: 12 4th speed 1/min: 800 To travel mm: 1.602.40 mm: (1.102.70) Shutoff electromagnet Volt: 12 5hutoff electromagnet Volt: 12 6th speed 1/min: 2000 To travel mm: 7.208.C0 Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: 1st speed 1/min: 2300 Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: 1st speed 1/min: 2300 Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Shutoff electromagnet Volt: 12 2nd speed 1/min: 600 Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overlow quantity and overflow valve: 1st speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overlow (11.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow (55.60139.00 quantity cm3/10s: (40.60154.00) 2nd speed 1/min: 2900 3nd speed 1/min: 2900 3nd speed 1/min: 2900		i: (4.6 06. 00)	+	Shutoff	
### 1,0002,40 mm: (1,002,40 mm: (1,102,90) ### speed 1/min: 2300 ### speed 1/mi			+	electromagnet Volt:	12
To travel mm: 1.602.40 ms: (1.102.90) ms: (1.102.90) ms: (1.102.90) ms: (1.102.90) ms: (1.102.90) ms: (1.102.90) shutoff electromagnet Volt: 12 bel. quantity m3/: 29.9032.30 12th speed 1/min: 1500 12th speed 1/min: 2000 12th speed 1/min: 1500 12th speed 1/min: 1000s. (27.0031.60) 13th speed 1/min: 1000s. (27.0031.60) 13th speed 1/min: 1000 13th speed 1/min: 600 13th speed 1/min: 450 13th speed 1/min:			+	Del. quantity cm3/:	17.0023.00
mm: (1.10,2.90) Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: 1st speed 1/min: 2300 Shutoff electromagnet Volt: 12 Supply-pump pressure bar: 7.408.00 Shutoff electromagnet Volt: 12 Supply-pump pressure bar: 5.305.90 Shutoff electromagnet Volt: 12 Shutoff e	4th speed 1/mir	: 800	4-		
Shutoff electromagnet Volt: 12			+		2300
Shutoff 1000S.: (28.6033.60) 12th speed 1/min: 1500 12th speed 1/min: 2000. 12th speed 1/min: 2000. 12th speed 1/min: 1500 15th speed 1/min: 2300 20th speed 1/min: 450 20th speed 1/min: 2300 20th speed 1/min: 450 20th speed 1/min: 2300 20th speed 1/min: 450 20t		i: (1 .102. 90)	+	Shutoff	
1000s.: (28.6033.60)			+	electromagnet Volt:	12
electromagnet Volt: 12 6th speed 1/min: 2000 TD travel mm: 7.2D8.CD Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: 1st speed 1/min: 2300 Supply-pump pressure bar: 7.408.00 Shutoff electromagnet Volt: 12 2rd speed 1/min: 1500 Supply-pump pressure bar: 5.305.90 Shutoff electromagnet Volt: 12 3rd speed 1/min: 600 Supply-pump pressure bar: 3.103.70 Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) Zhd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Zhd speed 1/min: 2900 12th speed 1/min: 1500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8029.80 1000s.: (27.7031.60) 15th speed 1/min: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8029.80 1/min: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8029.80 1/min: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8029.80 1/min: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8029.80 1/min: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8029.80 1/min: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8029.80 1/min: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8029.80 1/min: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) 1000s.: (0.003.00) 1000s.: (0.003.00) 1000s.: (0.0014.00 Dispersion cm3/: 2.5 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.0014.00 Dispersion cm3/: 2.5 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00) 1000s.: (0.005.00) 1000s.: (0.005.00) 1	electromagnet Volt	: 12	+	Del. quantity cm3/:	29.9032.30
## Shutoff electromagnet Volt: 12			+	1000s.:	(28.6033.60)
TD travel mm: 7.2G8.CO	electromagnet Volt	: 12	+		1500
Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: 1st speed 1/min: 2300 Supply-pump bar: 7.408.00 Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Shutoff electromagnet Volt: 12 3nd speed 1/min: 600 Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Overflow (41.7083.40 quantity cm3/10s: (26.7098.40) Shutoff electromagnet Volt: 12 Overflow (55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: bel. quantity cm3/: 28.8029.80 20th speed 1/min: 600 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8031.20 20th speed 1/min: 600 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 Idle delivery: 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 Idle delivery: 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 Idle delivery: 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 Idle delivery: Idle delivery			+		
Supply-pump pressure characteristic:		: 7.2G8.CO	+		
15th speed 1/min: 1000			+		
Supply-pump pressure characteristic: 1st speed	electromagnet Volt	: 12	+		
State 1/min: 2300 Supply-pump 1000s.: (27.7032.30) 20th speed 1/min: 600 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.8031.20 20th speed 1/min: 600 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.5031.50 20th speed 1/min: 600 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.5031.50 20th speed 1/min: 600 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.5031.30 20th speed 1/min: 600 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.5032.30 20th speed 1/min: 600 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.5032.30 20th speed 1/min: 600 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.5032.30 20th speed 1/min: 600 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.5032.30 20th speed 1/min: 600 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 28.5032.30 20th speed 1/min: 650 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 Del. quantity cm3/: 0.003.00 Del. quantity cm3/: 25.6033.50 Del. quantity cm3/: 25.6033.50 Del. quantity cm3/: 25.603.00 Del. quantity cm3/			+		1000
Supply-pump Del. quantity cm3/: 28.8031.20 1000S.: (27.7032.30) 20th speed 1/min: 600 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.5031.50 Supply-pump 1000S.: (26.5033.50) Delivery-quant. and breakaway char.: Delivery-quant Delivery-	Supply-pump pressu	re characteristic:	+		
Supply-pump pressure bar: 7.408.00			+	electromagnet Volt:	12
Shutoff Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12 electromagnet Volt: 12 Del. quantity cm3/: 28.5031.50 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.5033.50) Mech. shutoff: Electr. shutoff: Electr. shutoff: Electr. shutoff: Electr. shutoff: Shutoff Del. quantity cm3/: 0.003.00 1000S.: (0.003.00) Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000S.: (7.0017.00) Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 2.5 Del. quantity cm3/: 0.005.00 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 Del. quantity cm3/: 0.005.00 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 Del. quantity cm3/: 0.005.00 Shutoff Electromagnet Volt: 12 Del. quantity cm3/: 0.00		: 2300	+	Del. quantity cm3/:	28.8031.20
Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Supply-pump pressure bar: 5.305.90 Shutoff electromagnet Volt: 12 3rd speed 1/min: 600 Supply-pump pressure bar: 3.103.70 Shutoff electromagnet Volt: 12 3rd speed 1/min: 600 Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overflow quantity at overflow valve: 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) 2nd speed 1/min: 2900 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0017.00) Dispersion cm3/: 2.5 1000S.: (7.0017.00) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 Shutoff	Supply-pump		+		
electromagnet Volt: 12 2nd speed 1/min: 1500 Supply-pump pressure bar: 5.305.90 Shutoff electromagnet Volt: 12 3rd speed 1/min: 600 Supply-pump pressure bar: 3.103.70 Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: electromagnet Volt: 12 bel. quantity cm3/: 28.5031.50 Mech. shutoff: Electr. shutoff: Shutoff: 1st speed 1/min: 450 Del. quantity cm3/: 0.003.00 Idle delivery: 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (7.0017.00) Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (3.0) 2nd speed 1/min: 550 3rd speed 1/min: 550	•	: 7.408.00	+	20th speed 1/min:	600
2nd speed 1/min: 1500 Supply-pump pressure bar: 5.305.90 Shutoff electromagnet Volt: 12 3rd speed 1/min: 600 Supply-pump pressure bar: 3.103.70 Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overflow (141.7083.40) quantity cm3/10s: (26.7098.40) Shutoff electromagnet Volt: 12 Overflow (55.60139.00) quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2900 Deli quantity cm3/: 28.5031.50 1000s.: (26.5033.50) Mech. shutoff: Electr. shutoff: Blectr. shutoff: 1st speed 1/min: 450 Deli quantity cm3/: 0.003.00 1dle delivery: 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Deli quantity cm3/: 10.0014.00 1000s.: (7.0017.00) Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Dei quantity cm3/: 0.005.00 2nd speed 1/min: 2900 3rd speed 1/min: 550			+		
Supply-pump pressure bar: 5.305.90 Shutoff electromagnet Volt: 12 3rd speed 1/min: 600 Supply-pump pressure bar: 3.103.70 Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve:	electromagnet Volt	: 12	+		
Mech. shutoff: electromagnet Volt: 12		: 15 00	+	Del. quantity cm3/:	28.5031.50
Shutoff electromagnet Volt: 12 3rd speed 1/min: 600 Supply-pump pressure bar: 3.103.70 Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: Mech. shutoff: Electr. shutoff: 1000s.: (0.003.00) Shutoff electromagnet volt: - 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 Dispersion cm3/: 2.5 1000s.: (7.0017.00) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550			+	1000s.:	(26.5033.50)
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Signature		40	+	Mech. shutoff:	
Supply-pump pressure bar: 3.103.70 Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 450	electromagnet Volt	: 12	+		
Shutoff Shut		: 600	+	Electr. shutoff:	
Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: Del. quantity cm3/: 0.003.00 1dle delivery: 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (7.0017.00) Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550	Supply-pump	7 40 7 70	+		1 880 880
Overlow quantity at overflow valve:		: 3.10,3.70	+	1st speed 1/min:	450
Overlow quantity at overflow valve: 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 1000s.: (7.0017.00) Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550		. 43	+	Del. quantity cm3/:	0.003.00
Overlow quantity at overflow valve: 1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2900 electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Dei. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550	electromagnet volt	: 12	+		(0.003.00)
1st speed 1/min: 600 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2900 Idle delivery: 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550	O mail accompanies de la constante de la const	A. a	†		
Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2900 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3nd speed 1/min: 550	overlow quantity a	t overtiow valve:	+	electromagnet volt:	40
Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2900 1st speed 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3nd speed 1/min: 550	1st speed 1/min	. 400	1	Talia alabê	
electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 2nd speed 1/min: 450 Shutoff electromagnet Volt: 12 Dispersion cm3/: 10.0014.00 Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550	- 1	: 600	Ť	tate detivery:	
Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 2nd speed 1/min: 2900 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550		. 12	T	1st seed 1/sin.	/50
quantity cm3/10s: (26.7098.40) electromagnet Volt: 12 2nd speed 1/min: 2300 bel. quantity cm3/: 10.0014.00 Shutoff 1000s.: (7.0017.00) electromagnet Volt: 12 0ispersion cm3/: 2.5 Overflow : 55.60139.00 1000s.: (3.0) quantity cm3/10s: (40.60154.00) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 bel. quantity cm3/: 0.005.00 2nd speed 1/min: 2900 3rd speed 1/min: 550	Overflow	· /1 70 93 /0	7		400
2nd speed 1/min: 2300 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Del. quantity cm3/: 10.0014.00 Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550			T		10
Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550			T		
electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: Dispersion cm3/: 2.5 1000s.: (3.0) 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550		. 2300	T		
Overflow : 55.60139.00		• 12	Ι		
quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 2nd speed 1/min: 650 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 2nd speed 1/min: 2900 3rd speed 1/min: 550			I		
Delivery-quant. and breakaway char.: - Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000s.: (0.005.00) 3rd speed 1/min: 550			I		
Delivery-quant. and breakaway char.: - electromagnet Volt: 12 - Del. quantity cm3/: 0.005.00 - 1000S.: (0.005.00) 2nd speed 1/min: 2900 - 3rd speed 1/min: 550	qualities the 103	. (-0.00)	I		UCU
- Del. quantity cm3/: 0.005.00 1000S.: (0.005.00) 2nd speed 1/min: 2900 - 3rd speed 1/min: 550	Delivery-quant an	d hreakauav char ·	Ι		12
2nd speed 1/min: 2900 + 3rd speed 1/min: 550	POETFORF QUALITY OF	a al cultural triul	I		
2nd speed 1/min: 2900 + 3rd speed 1/min: 550			I		
	2nd speed 1/min	: 2900	1		
1			1	or a speca 17mm.	
			1		

Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.00...8.00 1000s.: (0.00...10.50) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1500 1st speed Inj.-qty. cm3/ : -7.0...-9.0 " difference 1000s.: -Shutoff electromagnet Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1/min: 1500 1st speed Supply pump-: -0.1...-0.3 " pressure difference bar: -Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1/min: 350 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 43.00...59.00 1000s.: (43.00...59.00) 2nd speed 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 32.00...42.00 1000s.: (32.00...42.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.00...63.00 1000s.: (37.00...63.00) Shutoff electromagnet: Cut-in min voltage : 10.0 : 12.0 Rated voltage Mounting and assembly dimensions:

mm: 3.2...3.4

mm: 5.3...5.7

mm: 1.6...2.0 mm: 37.2...39.2

mm: 47.8...56.2

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Remarks:

K

KF

MS

Ya

Designation

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : FOR Edition : 08.02.94 replaces Calibrating oil : ISO-4113 Injection pump : VE4/8F2400R495 Type number : 0 460 484 063 Customer Part-No. : Customer-specific information Customer : FORD Engine : 1,8 L IDI NA TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder assembly : 1 688 901 022 Opening bar: 130.00...133.00 Pressure Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450 Start of delivery Prestroke mm: -(from BDC): -Start of delivery block Piston stroke mm: 0.85 mm: +0.02(0.06)Outlet Injection pump setting values Test specifications in parentheses

AFB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Supply-pump pressure 1/min: 1500 Speed Setting value bar: 6.40...7.00 K3B/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 Full-load del. w/out charge press.: Speed 1/min: 1750 Del. quantity cm3/ 1000s.: 31.00...31.40 KSB/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 cm3/: 2.0 Dispersion 1000s.: (3.0) Low-idle speed regulation 1/min: 425 Speed Del. quantity cm3/ 1000s.: 6.00...10.00 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000S.: (2.5) Speed KSB/AFB valve Shutoff Speed KSB/AFB valve Shutoff

Residual-Delivery Setting 1/min: 530 Del. quantity cm3/ 1000s.: 1.00...5.00 Volt: 12 electromagnet Volt: 12 Full-load speed regulation 1/min: 2625 Del. quantity cm3/ 1000s.: 9.50...15.50 Volt: 12 electromagnet Volt: 12 Start:

11

Speed

Timing-device travel

1/min: 1500

Setting value mm: 6.50...6.90

1/min: 100 Shutoff Del. quantity cm3/: 50.00...70.00 mind 1000s.: 50.00 electromagnet Volt: 12 1/min: 400 mind 9th speed mm: 3.40...3.60 A KSB/AFB TD travel mm: (2.50...4.50) A Volt: 12 Valve Shutoff KSB/AFB electromagnet Volt: 12 valve Volt: -Shutoff Load-dependent start of delivery: electromagnet Volt: 12 Irij.-qty.dif.measurement: Supply-pump pressure characteristic: Speed 1/min: 1200 Inj.-qty. cm3/1/min: 750 1st speed difference 1000s.: -5.20..-13.20 # Supply-pump bar: 4.10...4.70 KSB/AFB pressure valve Volt: 12 KSB/AFB Shutoff valve Volt: 12 electromagnet Volt: 12 Shutoff TD-travel dif.measurement electromagnet Volt: 12 correttore anticipo iniezione (SV) 2nd speed 1/min: 1500 1.Speed 1/min: 1200 Supply-pump TD-travel bar: 6.40...7.00 pressure difference mm: -1.50...-1.70#KSB/AFB KSB/AFB Volt: 12 valve Volt: 12 valve Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12 1/min: 2000 3rd speed Supply-pump Inspection pump test specifications bar: 7.90...8.50 pressure Test specifications in parentheses KSB/AFB Volt: 12 valve Timing-device characteristic: Shutoff electromagnet Volt: 12 1/min: 2000 2nd speed mm: 8.40...9.20 TD travel Overlow quantity at overflow valve: mm: (8.00...9.60) KSB/AFB 1/min: 750 1st speed valve Volt: 12 KSB/AFB Shutoff Volt: 12 valve electromagnet Volt: 12 Shutoff 1/min: 1500 3rd speed electromagnet Volt: 12 mm: 6.50...6.90 : 41.70...86.10 TD travel Overflow mm: (6.00...7.40) cm3/10s: (26.70...101.10) 1/min: 2400 quantity KSB/AFB 2nd speed valve Volt: 12 KSB/AFB Volt: 12 Shutoff valve electromagnet Volt: 12 Shutoff 1/min: 800 4th speed electromagnet Volt: 12 mm: 2.80...3.60 TD travel : 55.60...139.00 Overflow mm: (2.40...4.00)quantity cm3/10s: (40.60...154.00) KSB/AFB valve Volt: 12 Delivery-quant. and breakaway char.: Shutoff electromagnet Volt: 12 1/min: 1000 8th speed 3rd speed 1/min: 2950 mm: 2.80...5.20 B TD travel KSB/AFB mm: (2.70...5.30) B Volt: 12 valve KSB/AFB Shutoff Volt: valve electromagnet Volt: 12

Del. quantity cm3/: 0.002.00 1000S.: (0.002.00)	solidale con carcassa: Idle delivery:
5th speed 1/min: 2625 KSB/AFB	1st speed 1/min: 425
valve Volt: 12 Shutoff	+ KSB/AFB + valve Volt: 12
electromagnet Volt: 12	+ Shutoff
Del. quantity cm3/: 9.5015.50	+ electromagnet Volt: 12
1000S.: (8.0017.00)	Del. quantity cm3/: 6.0010.00
8th speed 1/min: 2550	† 1000s.: (4.0012.00)
KSB/AFB valve Volt: 12	The state of the s
Shutoff	High Idle:
electromagnet Volt: 12	1st speed 1/mi: 570
Del. quantity cm3/: 15.0023.00	KSB/AFB
10005.: (13.0025.00)	+ valve Volt: 12
9th speed 1/min: 2400	Shutoff
KSB/AFB	electromagnet Volt: 12
valve Volt: 12	Del. quantity cm3/: 11.0015.00
Shutoff	1000s.: (9.0017.00)
electromagnet Volt: 12	+
Del. quantity cm3/: 25.1027.10	- Residual:
1000s.: (24.1028.10)	
12th speed 1/min: 1750	+ 1.Rotacao 1/min: 530
KSB/AFB	KSB/AFB
valve Volt: 12 Shutoff	+ valve Volt: 12
electromagnet Volt: 12	+ Shutoff
Del. quyntity cm3/: 31.0031.40	electromagnet Volt: 12
10008.: (29.5032.90)	+ Del. quantity cm3/: 1.005.00 + 10005:: (0.205.80)
15th speed 1/min: 1000	I (0.20).0)
KSB/AFB	Load-dependent start of delivery:
valve Volt: 12	Injqty.dif.measurement:
Shutoff	
electromagnet Volt: 12	+ 1st speed 1/min: 1200
Del. quantity cm3/: 28.7031.70	+ Injqty. cm3/ : -5.07.0 "
1000s.: (27.9032.50)	+ difference 1000s.: -
20th speed 1/min: 750	+ KSB/AFB
KSB/AFB	valve Volt: 12
valve Volt: 12 Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12 + 2nd speed 1/min: 1200
Del. quantity cm3/: 28.5031.50	Injqty. cm3/: +2.0+8.0 Z'
1000S.: (27.7032.30)	+ difference 1000s.: -
	-
Mech. shutoff:	+ TD-travel dif.measurement:
	+ correttore anticipo iniezione (SV)
Electr. shutoff:	+ 1st speed 1/min: 1200
A	+ TD-travel : -1.72.5 '
1st speed 1/min: 425	- difference mm: -
Del. quantity cm3/: 0.003.00	+ KSB/AFB
1000s.: (0.003.00)	+ valve Volt: 12
Shutoff	Shutoff
electromagnet volt: - KSB/AFB	† electromagnet Volt: 12
valve Volt: 12	SP pressdif.measurement:
TOOLS IL	pompa di mandata (FP):
Damper set qty.:	+ 1st speed 1/min: 1200
• •	+
1 FG-rotting:	1

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Supply pump-: -0.1...-0.3 " pressure bar: difference KSB/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1/min: 275 1st speed KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity_cm3/: 50.00...80.00 1000s.: (50.00...80.00) 1/min: 500 2nd speed KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 28.00...40.00 1000S .: LFG- 570 VH- VL 1/min: 500 3rd speed KSB/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 Del. quantity cm3/: 24.00...36.00 1000S.: LFG- 425 VH-- VL 1/min: 200 4th speed KSB/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 Del. quantity cm3/: 50.00...70.00 1000s.: LFG- 425 VH- VL Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mn: -KF mm: KOT

> mm: 2.1...2.3 mm: 31.8...35.8 mm: 38.0...47.0

Ya = Distance between VE flange and

Measurement point = edge of control

speed-control lever in idle

lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

A = KSB adjustment point B = KSB curve point

position

MS

Ya

Note inst. in remarks column

Test scheet : FIA Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/8F2300R537 Type number : 0 460 484 067

Customer Part-No. :

Customer-specific information Customer : FIAT-AUTO

Engine : M708 HT 17.L

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil **°**€ return temp.

with thermometer: 40.00...48.00 Electronically: 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Opening

Pressure bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length

Start of delivery mm: -Prestroke (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Charge press. hPa: 1000

Setting value mm: 4.00...4.20

AFB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1500 Charge press hPa: 1000

Setting value bar: 5.20...5.80

KSB/AFB

Volt: 12 valve

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1500 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 41.00...42.00

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12 cm3/: 2.5 Dispersion 1000s.: (2.5)

Full-load del. w/out charge press.:

1/min: 750 Speed

Del. quantity cm3/ 1000s.: 28.00...29.00

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KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

1/min: 450 Speed

Del. quantity cm3/

1000s.: 10.00...14.00

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2.5)

Full-load speed regulation

1/min: 2500 Speed hPa: 1000 Charge press

Del. quantity cm3/

1000s.: 29.00...33.00

KSB/AFB

valve Volt: 12

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

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Del. quantity cm3/: 35.0059.00	1
mind 1000s.: 35.00	Supply-pump pressure characteristic:
KSB/AFB	copper pand pressure characteristre.
Valve Volt: 12	1st speed
Shutoff	Charge press. hPa: 1000
electromagnet Volt: 12	Supply-pump
Ceceronagner voce. 12	pressure bar: 7.307.90
Inspection-pump test specifications	KSB/AFB
Test specifications in parentheses -	valve Volt: 12
rest specifications in parentheses	Shutoff
Timing-device characteristic:	electromagnet Volt: 12
chirting device character iscit.	3rd speed 1/min: 1500
2nd speed 1/min: 2000	
Charge press hPa: 1000	Charge press. hPa: 1000
fD travel mm: 6.507.10	- Supply-pump
mm: (6.207.40)	pressure bar: 5.205.80
KSB/AFB	KSB/AFB
valve Volt: 12	valve Volt: 12
Shutoff	Shutoff
electromagnet Volt: 12	electromagnet Volt: 12
3rd speed 1/min; 1500	4th speed 1/min: 1000
	Charge press. hPa: 1000
Charge press hPa: 1000	Supply-pump
TD travel mm: 4.004.20	pressure bar: 3.904.50
mm: (3.504.70) - KSB/AFB	KSB/AFB
	valve Volt: 12
	Shutoff
Shutoff -	electromagnet Volt: 12
electromagnet Volt: 12	
4th speed 1/min: 1000	Overlow quantity at overflow valve:
Charge press hPa: 1000	1-
TD travel mm: 1.101.70 -	1st speed 1/min: 750
mm; (0.802.00) -	Charge press. hPa: -
KSB/AFB	KSB/AFB
valve Volt: 12	valve Volt: 12
Shutoff -	Shutoff
electromagnet Volt: 12	electromagnet Volt: 12
5th speed 1/min: 2300 -	Overflow : 41.7083.40
Charge press. hPa: 1000	quantity cm3/10s: (26.7098.40)
TD travel mm: 7.908.50 -	2nd speed 1/min: 2300
mm: (7.608.80) -	Charge press. hPa: 1000
KSB/AFB	KSB/AFB
valve Volt: 12 - Shutoff -	valve Volt: 12
electromagnet Volt: 12	Shutoff
	electromagnet Volt: 12
	Overflow : 55.60139.00
Charge press. hPa: 1000 TD travel mm: 2.004.00 B	quantity cm3/10s: (40.60154.00)
	Not in a second to second a second as a second
MM: -	Delivery quant. and breakaway char.:
valve Volt: -	
Shutoff	1nd anal 1/2:2 1100
electromagnet Volt: 12	1nd speed 1/min: 1100
9th speed 1/min: 400	Charge-air pressure-setting
Charge press. hPa: 1000	point hPa: 350 KSB/AFB
TD travel mm: 2.504.50 A	
	valve Volt: 12 Shutoff
MMD: -	4
valve Volt: -	electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 37.0038.00
electromagnet Volt: 12	1000S.: (34.5040.50) 2nd speed 1/min: 2900
erter tribbelly will will to the	4. 2023 CENTAL LONGING ALBEI

Charge press. hPa:	1000	+	Shutoff
KSB/AFB		-	electromagnet Volt: 12
valve Volt:	12	+	Del. quantity cm3/: 38.0041.00
Shutoff		ŀ	1000s.: (37.0342.00)
electromagnet Volt:	12 -	t	
Del. quantity cm3/:	0.003.00 -	†	Mech. shutoff:
3rd speed 1/min:	(0.003.00)	†	Floor shoulder
Charge press. hPa:		T	Electr. shutoff:
KSB/AFB	1000	Γ	1st speed 1/min: 450
valve Volt:	12	I	Del. quantity cm3/: 0.003.00
Shutoff	•	1	1000s.: (0.003.00)
electromagnet Volt:	12 .	-	Shutoff
Del. quantity cm3/:		+	electromagnet volt: -
	(3.5013.50)	+	KSB/AFB
5th speed 1/min:		-	valve Volt: 12
Charge press. hPa:	1000 -	t	
KSB/AFB	42	+	Idle delivery:
valve Volt:	12	†	4
Shutoff	12	t	1st speed 1/min: 450
electromagnet Volt: Del. quantity cm3/:	20 00 33 00		KSB/AFB valve Volt: 12
	(26.0036.00)		valve Volt: 12 Shutoff
9th speed 1/min:			electromagnet Volt: 12
Charge press. hPa:			Del. quantity cm3/: 10.0014.00
KSB/AFB		-	1000s.: (7.0017.00)
valve Volt:	12 -	-	Dispersion cm3/: 2.5
Shutoff	•	-	1000s.: (2.5)
electromagnet Volt:	12 -	+	2nd speed 1/min: 550
Del. quantity cm3/:	40.0043.00	+	KSB/AFB
1050S.:	(39.0044.00)	-	valve Volt: 12
12th speed 1/min:		†	Shutoff 12
Charge press. hPa: KSB/AFB	1000	†	electromagnet Voit: 12
valve Volt:	12	Ī	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)
Shutoff	16		3rd speed 1/min: 400
electromagnet Volt:	12		KSB/AFB
Del. quyntity cm3/:	41.0042.00	_	valve Volt: 12
1000s.:	(39.2043.80)	-	Shutoff
16th speed 1/min:		-	electromagnet Volt: 12
Charge press. hPa:	-	-	Del. quantity cm3/: 20.5025.50
KSB solenoid-operati		-	1000s.: -
valve volt:	12 -	-	
Shutoff	42	-	Part-load del.at 3rd injqty.
electromagnet volt:		†	terza fermo della portata
Del. quantity cm3/: 1000H.:			stop (EGR set) scarico) (ARF)
18th speed 1/min:			gaz d'échappement-ARF)
Charge press. hPa:			Spacing mm: 12.0
KSB/AFB			opacing init. 12.0
valve Volt:	12	-	1st speed 1/min: 1100
Shutoff	-	-	Charge press. hPa: 1000
electromagnet Volt:	12	-	KSB/AFB
Del. quantity cm3/:	28.0029.00	-	valve Volt: 12
	(25.5031.50)	+	Shutoff
20th speed 1/min:		-	electromagnet Volt: 12
Charge press. hPa:	1000	-	Del. quantity cm3/: 19.021.00
KSB/AFB	12	†	1000s.: (17.5022.50)
valve Volt:	16		Automatic starting fuel delivery:
	4	-	MILLERAL LE STATISTAT TUBI DBC3VBPV'

1st speed 1/min: 300 KSB/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.00...57.00 1000s : (37.00...57.00) 2nd speed 1/min: 500 KSB/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 Del. quantity cm3/: 17.00...37.00 1000S .: (17.00 ... 37.00) 1/min: 100 4th speed KSB/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...59.00 1000s : (35,00...59.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mn: 3.2...3.4 K KF mm: 5.2...5.6 MS mm: 0.8...1.2 mm: 37.2...39.2 mm: 40.4...49.0 Ya Ajustement Potentiometer: Supply voltage volt: 5.0 pot. Output volt volt: 3.32 pot. Remarks:

Ya = Distance between VE flange and

Measurement point = edge of control

Yb = Distance between VE flange and speed-control lever in rated speed

Measurement point = edge of control

speed-control lever in idle

lever on drive end

lever on distributor-head end

A = KSB adjustment point B = KSB curve point

Pump with slave plunger

position

position

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : FIA Edition : 02.94 replaces Calibrating oil : ISO-4113 Injection pump : VE4/8F2300R538 Type number : 0 460 484 068 Customer Part-No. : Customer-specific information Customer : FIAT-AUTO Engine : M708 HT 17.L TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil °C return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Opening Pressure bar: 130.00...133.00 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length Start of delivery Prestroke mn: -(from BDC): -

Injection pump setting values Test specifications in parentheses Timing-device travel 1/min: 1500

Charge press. hPa: 1000 Setting value mm: 4.00...4.20 AFB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12

Supply-pump pressure 1/min: 1500 Speed Charge press hPa: 1000 Setting value bar: 5.20...5.80 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Full-load del. with charge press.: 1/min: 1500 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 41.00...42.00 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 1000S.: (2.5) Full-load del. w/out charge press.: Speed 1/min: 750 Del. quantity cm3/ 1000s.: 28.00...29.00 KSB/AFB 11 valve Volt: 12 Shutoff electromagnet Volt: 12 Low-idle speed regulation 1/min: 450 Del. quantity cm3/ 1000s.: 10.00...14.00 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2.5) Full-load speed regulation Speed 1/min: 2500 Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 29.00...33.00 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12

1/min: 100

Start:

Speed

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Dal	1
Del. quantity cm3/: 35.0059.00 mind 1000s.: 35.00	† • • • • • • • • • • • • • • • • • • •
	+ Supply-pump pressure characteristic:
KSB/AFB	†
Valve Volt: 12	† 1st speed 1/min: 2300
Shutoff	+ Charge press. hPa: 1000
electromagnet Volt: 12	+ Supply-pump
	+ pressure bar: 7.307.90
Inspection-pump test specifications	+ KSB/AFB
Test specifications in parentheses	+ valve Volt: 12
Toda opidati todatidila til pai ditilito ya	Shutoff
Timing-device characteristic:	electromagnet Volt: 12
thing device character iscit.	
2nd mand 1/mins 2000	3rd speed 1/min: 1500
2nd speed 1/min: 2000	Charge press. hPa: 1000
Charge press hPa: 1000	+ Supply-pump
TD travel mm: 6.507.10	pressure bar: 5.205.80
mm: (6.207.40)	+ KSB/AFB
KSB/AFB	+ valve Volt: 12
valve Volt: 12	+ Shutoff
Shutoff	electromagnet Volt: 12
electromagnet Volt: 12	4th speed 1/min: 1000
3rd speed 1/min: 1500	Charge press. hPa: 1000
Charge press hPa: 1000	+ Supply-pump
TD travel mm: 4.004.20	pressure bar: 3.904.50
mm: (3.504.70)	+ KSB/AFB
KSB/AFB	
	+ valve Volt: 12
valve Volt: 12	+ Shutoff
Shutoff	+ electromagnet Volt: 12
electromagnet Volt: 12	
4th speed 1/min: 1000	Overlow quantity at overflow valve:
Charge press hPa: 1000	
TD travel mm: 1.101.70	1st speed 1/min: 750
10 21 444	
mm: (0.802.00)	
rm: (0.802.00)	Charge press. hPa: -
mm: (0.802.00) KSB/AFB	Charge press. hPa: - KSB/AFB
mm: (0.802.00) KSB/AFB valve Volt: 12	Charge press. hPa: - KSB/AFB valve Volt: 12
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow: 41.7083.40
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40)
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80)	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow quantity cm3/10s: (26.7098.40) 2nd speed Charge press. hPa: 1000
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000 Charge press. hPa: 1000	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00
mm: (0.802.00) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00)
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: —	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: — KSB/AFB	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00)
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: — KSB/AFB valve Volt: —	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.:
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: — KSB/AFB valve Volt: — Shutoff	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.:
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: — KSB/AFB valve Volt: — Shutoff electromagnet Volt: 12	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 1nd speed 1/min: 1100 Charge-air pressure-setting
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: — KSB/AFB valve Volt: — Shutoff electromagnet Volt: 12 9th speed 1/min: 400	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 1nd speed 1/min: 1100 Charge-air pressure-setting point hPa: 350
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: - KSB/AFB valve Volt: - Shutoff electromagnet Volt: 12 9th speed 1/min: 400 Charge press. hPa: 1000 Charge press. hPa: 1000	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 1nd speed 1/min: 1100 Charge-air pressure-setting point hPa: 350 KSB/AFB
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KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: — KSB/AFB valve Volt: — Shutoff electromagnet Volt: 12 Shutoff	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 1nd speed 1/min: 1100 Charge-air pressure-setting point hPa: 350 KSB/AFB valve Volt: 12 Shutoff
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: — KSB/AFB valve Volt: — Shutoff electromagnet Volt: 12 9th speed 1/min: 400 Charge press. hPa: 1000 TD travel mm: 2.504.50 A mm: — KSB/AFB	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 1nd speed 1/min: 1100 Charge-air pressure-setting point hPa: 350 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: — KSB/AFB valve Volt: — Shutoff electromagnet Volt: 12 9th speed 1/min: 400 Charge press. hPa: 1000 TD travel mm: 2.504.50 A mm: — KSB/AFB valve Volt: —	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 1nd speed 1/min: 1100 Charge-air pressure-setting point hPa: 350 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.0038.00
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 5th speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 8th speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: — KSB/AFB valve Volt: — Shutoff electromagnet Volt: 12 9th speed 1/min: 400 Charge press. hPa: 1000 TD travel mm: 2.504.50 A mm: — KSB/AFB valve Volt: — Shutoff electromagnet Volt: 12 9th speed 1/min: 400 Charge press. hPa: 1000 TD travel mm: 2.504.50 A mm: — KSB/AFB valve Volt: — Shutoff	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 1nd speed 1/min: 1100 Charge-air pressure-setting point hPa: 350 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.0038.00 1000s.: (34.5040.50)
KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 2300 Charge press. hPa: 1000 TD travel mm: 7.908.50 mm: (7.608.80) KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Sth speed 1/min: 1000 Charge press. hPa: 1000 TD travel mm: 2.004.00 B mm: — KSB/AFB valve Volt: — Shutoff electromagnet Volt: 12 9th speed 1/min: 400 Charge press. hPa: 1000 TD travel mm: 2.504.50 A mm: — KSB/AFB valve Volt: —	Charge press. hPa: - KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 2300 Charge press. hPa: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00) Delivery-quant. and breakaway char.: 1nd speed 1/min: 1100 Charge-air pressure-setting point hPa: 350 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.0038.00

Charge press. h	Pa:	1000	+	Shutoff
KSB/AFB		40	+	electromagnet Volt: 12
	lt:	12	+	Del. quantity cm3/: 38.0041.00
Shutoff			+	1000s.: (37.0042.00)
electromagnet Vo			+	
Del. quantity cm	3/:	0.003.00	+	Mech. shutoff:
1000	S.:	(0.003.00)	1	
3rd speed 1/m	in:	2700	1	Electr. shutoff:
Charge press. h			1	Ecoci i Silatoi i
KSB/AFB		1032	1	1st speed 1/min: 450
	lt:	12	T	
Shutoff		12	T	Del. quantity cm3/: 0.003.00
	I A.	42	T	10008.: (0.003.00)
electromagnet Vo			†	Shutoff
Del. quantity cm			+	electromagnet volt: -
		(3.5013.50)	+	KSB/AFB
5th speed 1/m	in:	2500	+	valve Volt: 12
Charge press. h	Pa:	1000	+	
KSB/AFB			1	Idle delivery:
valve Vo	1++	12	1	2200 2001101,1
Shutoff		• •	1	1st speed 1/min: 450
electromagnet Vo	1+.	12	T	KSB/AFB
			T	
Del. quantity cm	5/:	29.0033.00	†	valve Volt: 12
0.1	5.:	(26.0036.00)	+	Shutoff
9th speed 1/m			+	electromagnet Volt: 12
Charge press. h	Pa:	1000	+	Del. quantity cm3/: 10.0014.00
KSB/AFB			+	1000s.: (7.0017.00)
valve Vo	lt:	12	+	Dispersion cm3/: 2.5
Shutoff			+	1000s.: (2.5)
electromagnet Vo	1++	12	1	2nd speed 1/min: 550
Del. quantity cm			1	KSB/AFB
1000	· ·	(39.0044.00)	Ŧ	
12th speed 1/m	3	4500	T	
			†	Shutoff
Charge press. h	ra:	1000	†	electromagnet Volt: 12
KSB/AFB		4.0	+	Del. quantity cm3/: 0.003.00
	lt:	12	+	1000s.: (0.003.00)
Shutoff			+	3rd speed 1/min: 400
electromagnet Vo	lt:	12	+	KSB/AFB
Del. quyntity cmi	3/:	41.0042.00	+	valve Volt: 12
1000	S.:	(39.2043.80)	+	Shutoff
16th speed 1/m	in:	1100	1	electromagnet Volt: 12
Charge press. h	Pa:	-	\perp	Del. quantity cm3/: 20.5025.50
KSB solenoid-ope			1	10005.: -
	lt:		I	10003
Shutoff	ι	12	T	Automobile shoulden fort ditt
	1.4.	40	T	Automatic starting fuel delivery:
electromagnet vo			†	4-1
Del. quantity cm			†	1st speed 1/min: 300
1000			+	KSB/AFB
18th speed 1/m			+	valve Volt: 12
Charge press. h	Pa:		+	Shutoff
KSB/AFB			+	electromagnet Volt: 12
valve Vo	lt:	12	+	Del. quantity cm3/: 37.0057.00
Shutoff		- -	1	10008.: (37.0057.00)
electromagnet Vo	1+-	12	1	100001 (31.00)(1.00.
Del. quantity cmi			I	2nd speed 1/min: 500
		(25.5031.50)	I	KSB/AFB
			T	
		750	T	valve Volt: 12
Charge press. hi	ra:	1000	+	Shutoff
KSB/AFB		40	†	electromagnet Volt: 12
valve Vo	lt:	12	+	Del. quantity cm3/: 17.0037.00
			+	10005 - (17 00 37 00)

4th speed 1/min: 100

KSB/AFB

Volt: 12 valve

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 35.00...59.00 1000s.: (35.00...59.00)

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

mm: 3.2...3.4 mm: 5.2...5.6 K KF mm: 0.8...1.2 MS nm: 37.2...39.2 Ya mm: 40.4...49.0 Yb

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

A = KSB adjustment point B = KSB curve point

Pump with slave plunger

Note inst. in remarks column

Test scheet : VWW Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/8F2300R536 Type number : 0 460 484 069

Customer Part-No. :

Customer-specific information Customer : VW ECO

Engine : 1.9

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating oil °C return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Openina

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Setting value mm: 3.00...3.40

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250

Setting value bar: 4.90...5.50

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1250

Del. quantity cm3/

1000s.: 35.50...36.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.0 1000s.: (3.0)

Low-idle speed regulation

1/min: 450

Del. quantity cm3/

1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

1/min: 550 Speed

Del. quantity cm3/

1000s.: 5.50...6.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2500

Del. quantity cm3/

1000s.: 18.00...28.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 35.00...61.00 mind 1000s.: 35.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1250 Speed

Ini.-aty. cm3/

difference 1000S.: -4.5...-10.5 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1/min: 1250 1.Speed

TD-travel 1nd speed 1/min: 2800 difference mm: -0.6...-0.8 # Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 electromagnet Volt: 12 1000s.: -Inspection-pump test specifications Test specifications in parentheses 1/min: 2500 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 18.00...29.00 1000s.: (17.00...29.00) 3rd speed 1/min: 2600 Timing-device characteristic: 1/min: 2000 2nd speed mm: 5.80...6.60 TD travel Shutoff mm: (5.50...6.90) electromagnet Volt: 12 Del. quantity cm3/: 10.0...14.00 Shutoff 1000s.: (8.00...16.00) 1/min: 2200 5th speed Shutoff mm: (2.50...3.90) Shutoff electromagnet Volt: 12 1/min: 750 4th speed mm: 0.40...1.20 TD travel Shutoff mm: (0.10...1.50) electromagnet Volt: 12 Del. quantity cm3/: 35.50...36.50 Shutoff 1000s.: (33.80...38.20) 1/min: 750 electromagnet Volt: 12 7th speed Supply-pump pressure characteristic: Shutoff electromagnet Volt: 12
Del. quantity cm3/: 30.50...33.50
1000s.: (29.00...35.00) 1st speed 1/min: 2000 Supply-pump pressure bar: 6.90...7.50 8th speed 1/min: 400 Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 31.50...36.50 1000s.: (29.00...39.00) electromagnet Volt: 12 3rd speed 1/min: 1250 Supply-pump bar: 4,90...5,50 pressure Shutoff Mech. shutoff: electromagnet Volt: 12 4th speed 1/min: 750 Electr. sbutoff: Supply-pump pressure bar: 3.50...4.10 1st speed 1/min: 450 Del. quantity cm3/: 0.00...3.00 Shutoff electromagnet Volt: 12 1000s.: (0.00...3.00) Shutoff Overlow quantity at overflow valve: electromagnet volt: -1st speed 1/min: 750 Damper set qty.: Shutoff electromagnet Volt: 12 LFG-setting: : 41.70...83.40 Overflow solidale con carcassa: cm3/10s: (26.70...98.40) 1/min: 2200 quantity Idle delivery: 2nd speed Shutoff 1/min: 450 1st speed electromagnet Volt: 12 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 7.00...9.00
1000S.: (4.00...12.00)
Dispersion cm3/: 2.0 : 55.60...139.00 Overflow cm3/10s: (40.60...154.00) quantity Delivery quant. and breakaway char.: 1000s.: (3.0)

High Idle:	+	1st speed 1/min: 308
1st speed 1/mi: 525	†	Shutoff
Shutoff	Ι	electromagnet Volt: 12 Del. quantity cm3/: 18.0038.00
electromagnet Volt: 12	1	10005.: (18.0038.00)
Del. quantity cm3/: 7.009.00	1	10003 (10.0050.00)
1000s.: (4.0012.00)	1	2nd speed 1/min: 180
	1	Shutoff
Residual:	1	electromagnet Volt: 12
	1	Del. quantity cm3/: 35.0069.00
1.Rotacao 1/min: 550	1	1000s.: -
Shutoff	1	
electromagnet Volt: 12	4-	4th speed 1/min: 100
Del. quantity cm3/: 5.506.50	+	Shutoff
1000s.: (4.008.00)	+	electromagnet Volt: 12
2nd speed 1/min: 500	+	Del. quantity cm3/: 35.0061.00
Shutoff	+	1000s.: -
electromagnet Volt: 12	+	
Del. quantity cm3/: 6.008.00	+	Shutoff electromagnet:
1000s.: (4.509.50)	+	•
	+	Cut-in
Load-dependent start of delivery:	+	min voltage : 10.0
Injqty.dif.measurement:	t	Rated voltage : 12.0
4	+	
1st speed	+	Mounting and assembly dimensions:
Injqty. cm3/ : -5.57.5 "	+	
difference 1000s.: -	+	Designation
Shutoff	+	K mm: 3.23.4
electromagnet Volt: 12	+	KF mm: 5.15.5
2nd speed 1/min: 1250	+	MS mm: 1.21.4
Injqty. cm3/: 0.0+3.0 Z' difference 1000s.: -	+	Ya mm: 37.641.6
Shutoff	†	Yb mm: 44.054.0
electromagnet Volt: 12	†	Compaign
etectrollagret vott. 12	T	Remarks:
TD-travel dif.measurement:	I	•
correttore anticipo iniezione (SV):	I	Ya = Distance between VE flange and
1st speed 1/min: 1250	Ι	speed-control lever in idle
TD-travel : -1.31.7	I	position
difference mm: (-1.02.0)	1	Measurement point = edge of control
Shutoff	1	lever on drive end
electromagnet Volt: 12	1	COVER ON AN IVE CINA
	+	
SP pressdif.measurement:	+	Yb = Distance between VE flange and
pompa di mandata (FP):	+	speed-control lever in rated speed
1st speed 1/min: 1250	+	position
Supply pump-	+	Measurement point = edge of control
pressure : -0.10.3 "	+	lever on distributor-head end
difference bar: -	+	
Shutoff	+	
electromagnet Volt: 12_	+	
2nd speed 1/min: 1250	+	
Supply pump-	+	On initial measurement, screw in
pressure : -0.71.1	+	residual-quantity adjusting screw 2 mm
difference bar: (-0.51.3)'	+	
Shutoff	+	Following pump adjustment, screw out
electromagnet Volt: 12	+	residual-quantity adjusting screw 2 mm
Andreadic structure for the training	†	
Automatic starting fuel delivery:	†	<pre>Z = Absolute delivery</pre>
	+	

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Note inst. in remarks column

Test scheet : REN Edition : 03.94 replaces : -

Calibrating oil : ISO-4113

Injection pump : VE4/8F2050R588

Type number : 0 460 484 073 Customer Part-No.:

Customer—specific information Customer : RENAULT

Engine : F8Q - 640

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp. °C

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 022

Opening

Pressure bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery
Prestroke mm: (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1500

Setting value mm: 2.40...2.80

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1500

Setting value bar: 6.50...7.10

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250

Del. quantity cm3/

1000s.: 33.00...34.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.5 1000S.: (3.0)

Low-idle speed regulation

Speed 1/min: 410

Del. quantity cm3/

1000s.: 7.50...11.50

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 500

Del. quantity cm3/

1000s.: 1.00...5.00

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2150

Del. quantity cm3/

1000s.: 24.50...30.50

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100

Del. quantity cm3/: 40.00...70.00

mind 1000s.: 40.00

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000

TD travel mm: 4.60...5.40 mm: (4.30...5.70)

Shutoff

electromagnet Volt: 12 3rd speed 1/min: 1500

	2.402.80	b Shutoff
	(1.903.30)	- electromagnet Volt: 12
Shutoff	4.5	Del. quantity cm3/: 29.2031.20
electromagnet Volt:		1000s.: (27.9032.50)
4th speed 1/min:		- 10th speed 1/min: 1625
	1.001.80	- Shutoff
	(0.702.10)	- electromagnet Volt: 12
Shutoff	4	- Del. quantity cm3/: 30.4033.40
electromagnet Volt:	12	1000s.: (29.6034.20)
•	4	- 12th speed 1/min: 1250
Supply-pump pressur	e characteristic:	- Shutoff
		- electromagnet Volt: 12
1st speed 1/min:	500	- Del. quyntity cm3/: 33.0034.00
Supply-pump		1000s.: (31.2035.80)
	3.504.10	15th speed 1/min: 750
Shutoff	3.53	- Shutoff
electromagnet Volt:	12	- electromagnet Volt: 12
2nd speed 1/min:	15m	Del. quantity cm3/: 32.5035.50
Supply-pump	1300	
	6.507.10	1000S.: (31.7036.30)
Shutoff	0.50	- 20th speed 1/min: 500
	12	- Shutoff
electromagnet Volt:	2000	electromagnet Volt: 12
3rd speed 1/min:	2000	- Del. quantity cm3/: 31.5034.50
Supply-pump	1	- 1000s.: (30.7035.30)
	8.008.60	
Shutoff	1.	- Mech. shutoff:
electromagnet Volt:	12	
	 	- Electr. shutoff:
Overlow quantity at	overflow valve:	
	<u> </u>	- 1st speed 1/min: 410
1st speed 1/min:	500	- Del. quantity cm3/: 0.003.00
Shutoff	4	- 1000s.: (0.003.00)
electromagnet Volt:	12	- Shutoff
Overflow:	41.7086.10	- electromagnet volt: -
quantity cm3/10s:	(26.70101.10)	
2nd speed 1/min:	2000	- Damper set qty.:
Shutoff	4	•
electromagnet Volt:	12	- LFG-setting:
	55.60139.00	- solidale con carcassa:
quantity cm3/10s:	(40.60154.00)	- Idle delivery:
Delivery quant. and	breakaway char :	- 1st speed 1/min: 410
outivory quarter area	1	- Shutoff
	1	- electromagnet Volt: 12
2nd speed 1/min:	2550	- Del. quantity cm3/: 7.5011.50
Shutoff	I	1000s.: (5.5013.50)
electromagnet Volt:	12	" 10003 (J.JU(J.JU)
Del. quantity cm3/:		High Tello
	(0.005.00)	- High Idle:
		4
	4630	- 1st speed 1/mi: 450
Shutoff	12	- Shutoff
electromagnet Volt:		- electromagnet Volt: 12
Del. quantity cm3/:	12.0020.00	- Del. quantity cm3/: 7.0011.00
	(11.0021.00)	- 1000s.: (5.0013.00)
5th speed 1/min:	2750	•
Shutoff	+	- Residual:
electromagnet Volt:		•
Del. quantity cm3/:		- 1.Rotacao 1/min: 500
	(23.5031.50)	- Shutoff
9th speed 1/min:	2000	- electromagnet Volt: 12

Del. quantity cm3/: 1.00...5.00 1000s.: (1.00...5.00) Automatic starting fuel delivery: 1st speed 1/min: 210 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 45.00...75.00 1000s.: (45.00...75.00) 2nd speed 1/min: 310 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 15.00...45.00 1000S.: (15.00...45.00) 1/min: 100 4th speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.00...70.00 1000s.: (40.00...70.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 K KF mm: 5.3...5.5 MS mm: 1.2...1.4 SVS max. mm: 3.3 Ya mm: 16.0...20.0 Yb mm: 65.9...77.7 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 MO8

ccm/1000 S.

Note inst. in remarks column

Test scheet : VWW Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE5/8F2100L358-4 : 0 460 485 007 Type number

Customer Part-No. :

Customer-specific information

Customer

Engine : 2,41 SD T4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil °C return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250

Setting value mm: 2.20...2.60

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250

Setting value bar: 5.70...6.30

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1250

Del. quantity cm3/

1000s.: 36.00...37.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.0 1000s.: (3.0)

Low-idle speed regulation

1/min: 415 Speed

Del. quantity cm3/

1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

1/min: 540 Speed

Del. quantity cm3/

1000s.: 6.50...7.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 35.00...85.00

mind 1000s.: 35.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1500

Inj.-qty. cm3/

difference 1000s.: -3.50...-9.50 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV) 1.Speed 1/min: 1500

TD-travel 1/min: 2600 3rd speed difference mm: -0.30..-0.50# Shutoff Shutoff electromagnet Volt: 12 Inspection-pump test specifications Test specifications in parentheses Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.00...14.00 1000s.: (8.00...16.00) Timing-device characteristic: 1/min: 1790 2nd speed 8th speed 1/min: 2300 mm: 5.30...6.10 TD travel Shutoff electromagnet Volt: 12
Del. quantity cm3/: 17.00...27.00
1000S.: (16.00...28.00)
9th speed 1/min: 2100 mm: (5.00...6.40) Shutoff electromagnet Volt: 12
3rd speed 1/min: 1250
TD travel mm: 2.20...2.60
mm: (1.70...3.10) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.00...32.00 1000\$.: (28.80...33.20) Shutoff electromagnet Volt: 12 4th speed 1/min: 1000 1/min: 1250 12th speed mm: 0.30...1.10 TD travel Shutoff mm: (0.00...1.40) Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 32.00...35.00 1000s.: (30.50...36.50) 1st speed 1/min: 600 Supply-pump pressure bar: 3.80...4.40 Shutoff Mech. shutoff: electromagnet Volt: 12 1/min: 1250 2nd speed Electr. shutoff: Supply-pump pressure bar: 5.70...6.30 1/min: 415 1st speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet Volt: 12 3rd speed 1/min: 2100 Shutoff Supply-pump electromagnet volt: bar: 8.10...8.70 pressure Shutoff Damper set qty.: electromagnet Volt: 12 LFG-setting: Overlow quantity at overflow valve: solidale con carcassa: Idle delivery: 1st speed 1/min: 600 Shutoff 1st speed 1/min: 415 electromagnet Volt: 12 Shutoff : 41.70...83.40 electromagnet Volt: 12 Del. quantity cm3/: 7.00...9.00 1000S.: (4.00...12.00) Overflow cm3/10s: (26.80...98.40) 1/min: 2100 quantity 2nd speed Shutoff electromagnet Volt: 12 High Idle: : 55.60...152.90 Overflow cm3/10s: (41.70...167.90) quantity 1st speed 1/mi: 465 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.00...9.00 1009: (4.00...12.00) Delivery-quant, and breakaway char.:

Residual: 1/min: 540 1.Rotacao Shuttoff electromagnet Volt: 12 Del. quantity cm3/: 6.50...7.50 1000s.: (6.00...19.00) 1/min: 490 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.80...8.80 1000s.: (6.30...11.30) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1st speed 1/min: 1500 Inj.-qty. cm3/ : -6.0...-8.0 " difference 1000s.: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Inj.-qty. cm3/: 0.0...+3.0 Z' Inj.-qty. difference 1000S.: -Shutoff electromagnet Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1500 : -1.7...-2.1 ' mm: (-1.3...-2.50)' TD-travel difference Shutoff electromagnet Volt: 12 SP press.—dif.measurement: pompa di mandata (FP): 1/min: 1500 1st speed Supply pump-: -0.10..-0.30" pressure difference bar: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Supply pump-: -0.8...-1.2 \ pressure difference bar: -Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000S.: (35.00...85.00) 1/min: 380 2nd speed

Del. quantity cm3/: 17.00...37.00 1000s.: (17.00...37.00) 1/min: 100 4th speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 KF mm: KOT MS mm: 1.3...1.5 SVS max. mm: 1.9 mm: 32.8...34.8 mm: 60.5...71.5 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control Lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor—head end On initial measurement, screw in residual-quantity adjusting screw 2 mm. Following pump adjustment, screw out residual quantity adjusting screw 2 mm. Z = Absolute delivery

Shutoff

electromagnet Volt: 12

Note inst. in remarks column

Test scheet : VWW Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE5/8F2100L453-4 Type number : 0 460 485 009

Customer Part-No. :

Customer-specific information

Customer : VW

Engine : 2,41 WK T4 KLIMA

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil °C return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening |

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250 Setting value mm: 2.20...2.60

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250 Speed

Setting value bar: 5.70...6.30

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1250

Del. quantity cm3/ 1000s.: 36.00...37.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.0 1000s.: (3.0)

Low-idle speed regulation

1/min: 415

Del. quantity cm3/

1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

Speed 1/min: 540

Del. quantity cm3/

1000s.: 6.50...7.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 35.00...85.00 mind 1000s.: 35.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1500 Speed

cm3/Inj.-qty.

difference 1000s.: -3.50...-9.50 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1/min: 1500 1.Speed

TD-travel 1/min: 2600 3rd speed mm: -0.30..-0.50# difference Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...6.00 1000s.: (0.00...6.00) 5th speed 1/min: 2400 electromagnet Volt: 12 Inspection-pump test specifications 5th speed Test specifications in parentheses Shutoff Timing-device characteristic: 1/min: 1790 mm: 5.30...6.10 mm: (5.00...6.40) 2nd speed 8th speed TD travel Shutoff electromagnet Volt: 12
Del. quantity cm3/: 17.00...27.00
1000s.: (16.00...28.00)
9th speed 1/min: 2100 Shutoff electromagnet Volt: 12 1/min: 1250 3rd speed mm: 2.20...2.60 TD travel Shutoff electromagnet Volt: 12
Del. quantity cm3/: 30.00 . 32.00
10005:: (28.80...33.20) mm: (1.70...3.10) Shutoff electromagnet Volt: 12
4th speed 1/min: 1000
TD travel mm: 0.30...1.10 1/min: 1250 12th speed Shutoff electromagnet Volt: 12
Del. quyntity cm3/: 36.00...37.00
1000S.: (34.30...38.70) mm: (0.00...1.40) Shutoff electromagnet Volt: 12 1/min: 600 20th speed Supply-pump pressure characteristic: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 32.00...35.00 1000s.: (30.50...36.59) 1st speed 1/min: 600 Supply-pump bar: 3.80...4.40 pressure Shutoff Mech. shutoff: electromagnet Volt: 12 1/min: 1250 2nd speed Electr. shutoff: Supply-pump bar: 5.70...6.30 pressure 1st speed 1/min: 415 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet Volt: 12 3rd speed 1/min: 2100 Shutoff Supply-pump electromagnet volt: pressure bar: 8.10...8.70 Shutoff Damper set qty.: electromagnet Volt: 12 LFG-setting: Overlow quantity at overflow valve: solidale con carcassa: Idle delivery: 1st speed 1/min: 600 Shutoff 1st speed 1/min: 415 electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.00...9.00 : 41.70...83.40 Overflow cm3/10s: (26.80...98.40) quantity 2nd speed 1/min: 2100 1000s.: (4.00...12.00) Shutoff electromagnet Volt: 12 High Idle: : 55.60...152.90 Overflow cm3/10s: (41.70...167.90) quantity 1st speed 1/mi: 465 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.00...9.00 Delivery quant. and breakaway char.: 1000s.: (4.00...12.00)

Residual: 1/min: 540 1.Rotacao Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.50...7.50 1000s.: (6.00...10.00) 1/min: 490 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.80...8.80 1000s.: (6.30...11.30) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1st speed 1/min: 1500 Inj.-qty. cm3/ : -6.0...-8.0 " difference 1000s.: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Inj.-aty. cm3/: 0.0...+3.0 Z' Inj.-qty. difference 1000s.: -Shutoff electromagnet Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1500 : -1.7...-2.1 ' TD-travel mm: (-1.3...-2.50) difference Shutoff electromagnet Volt: 12 SP press.—dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1500 Supply pump-: -0.10..-0.30" pressure difference bar: -Shutoff electromagnet Volt: 12 1/min: 1500 2nd speed Supply pumppressure : -0.8...-1.2 ' difference bar: -Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00) Del. quantity cm3/: 17.00...37.00 1000s.: (17.00...37.00) 1/min: 100 4th speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voitage : 12.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 KF mm: KOT mm: 1.3...1.5 MS SVS max. mm: 1.9 mm: 32.8...34.8 Ya mm: 62.5...68.5 Aiustement Potentiometer: Supply voltage pot. volt: 5.0 Cutput volt 8.0 :tlov pot. Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end On initial measurement, screw in residual-quantity adjusting screw 2 mm. Following pump adjustment, screw out residual quantity adjusting screw 2 mm.

Z = Absolute delivery

1/min: 380

2nd speed

Shutoff

M14

Note inst. in remarks column

Test scheet : VWW Edition : 03.94

replaces

Calibrating oil : ISO-4113

injection pump : VE5/8F2100L457 Type number : 0 460 485 010

Customer Part-No. :

Customer-specific information

Customer

: VW

Engine

: 2,41 SD T4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250

Setting value mm: 2.20...2.60

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250

Setting value bar: 5.70...6.30

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250

Del. quantity cm3/

1000s.: 36.00...37.00

Shutoff

electromagnet Volt: 12 cm3/: 2.0 Dispersion 1000s.: (3.0)

Low-idle speed regulation

Speed 1/min: 415

Del. quantity cm3/

1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

Speed 1/min: 540

Del. quantity cm3/

1**000**\$.: 6.50...7.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 35.00...61.00 mind 1000s.: 35.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery: Inj.-qty.dif.measurement:

1/min: 1500 Speed

cm3/Inj.-qty.

difference 1000s.: -3.50...-9.50 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1/min: 1500 1.Speed

TD-travel 1/min: 2600 3rd speed difference mm: -0.30..-0.50# Shutoff Shutoff electromagnet Volt: 12 Inspection-pump test specifications Test specifications in parentheses Shutoff Timing-device characteristic: 1/min: 1790 2nd speed mm: 5.30...6.10 TD travel Shutoff mm: (5.00...6.40) Shutoff electromagnet Volt: 12 1/min: 1250 mm: 2.20...2.60 mm: (1.70...3.10) 3rd speed TD travel Shutoff electromagnet Volt: 12
Del. quantity cm3/: 30.00...32.00
1000S.: (28.80...33.20) Shutoff electromagnet Volt: 12 4th speed 1/min: 1000 1/min: 1250 12th speed mm: 0.30...1.10 TD travel Shutoff electromagnet Volt: 12
Del. quyntity cm3/: 36.00...37.00
1000S.: (34.30...38.70)
20th speed 1/min: 600 mm: (0.00...1.40) Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 32.00...35.00 1000s.: (30.50...36.50) 1st speed 1/min: 600 Supply-pump pressure bar: 3.80...4.40 Shutoff Mech. shutoff: electromagnet Volt: 12 1/min: 1250 2nd speed Electr. shutoff: Supply-pump bar: 5.70...6.30 pressure 1st speed 1/min: 415 Del. quantity cm3/: 0.00...3.00 Shutoff electromagnet Volt: 12 3rd speed 1/min: 2100 1000s.: (0.00...3.00) 3rd speed Shutoff Supply-pump electromagnet volt: bar: 8.10...8.70 pressure Shutoff Damper set qty.: electromagnet Volt: 12 LFG-setting: Overlow quantity at overflow valve: solidale con carcassa: Idle delivery: 1st speed 1/min: 600 Shutoff 1st speed 1/min: 415 electromagnet Volt: 12 Shutoff : 41.70...83.40 electromagnet Volt: 12 Del. quantity cm3/: 7.00...9.00 1000S.: (4.00...12.00) Overflow cm3/10s: (26.80...98.40) quantity 2nd speed 1/min: 2100 Shutoff electromagnet Volt: 12 Residual: : 55.60...152.90 Overflow cm3/10s: (41.70...167.90) 1/min: 540 quantity 1.Rotacao Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.50...7.50 1000S.: (6.00...10.00) Delivery quant. and breakaway char.:

1/min: 490 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.80...8.80 1000s.: (5.30...10.80) Load-dependent start of delivery: Inj.-qty.dif.measurement: 2nd speed 1/min: 1500 cm3/: 0.0...+3.0 Z' Inj. -qty. difference 1000s.: -Shutoff electromagnet Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1500 : -1.7...-2.1 ' mm: (-1.3...-2.50)' TD-travel difference Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Supply pumppressure : -0.8...-1.2 difference bar: -Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1/min: 130 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...69.00 1000s.: (35.00...69.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 17.00...37.00 1000s.: (17.00...37.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...61.00 1000s.: (35.00...61.00) Shutoff electromagnet: Cut-in min voltage : 10.0 : 12.0 Rated voltage

Mounting and assembly dimensions:

mm: 3.2...3.4

mm: KOT

MS mm: 1.3...1.5 mm: 1.9 Ya mm: 32.8...34.8 Yb mm: 60.5...71.5

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

On initial measurement, screw in residual-quantity adjusting screw 2 mm

Following pump adjustment, screw out residual-quantity adjusting screw 2 mm.

Z = Absolute delivery

M17

KF

Designation

Note inst. in remarks column

Test scheet : VWW Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE5/8F2100L545 Type number : 0 460 485 017

Customer Part-No. :

Customer-specific information Customer : VW 153

Engine : 2,4L T4

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil °C return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Openina |

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Speed

Setting value mm: 2.20...2.60

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1250 Setting value bar: 5.70...6.30

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 1250

Del. quantity cm3/

1000s.: 36.00...37.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.0 1000S.: (3.0)

Low-idle speed regulation

1/min: 415

Del. quantity cm3/

1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

Speed 1/min: 540

Del. quantity cm3/

1000s.: 6.50...7.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

1/min: 2400 Speed

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 35.00...85.00

1000s.: 35.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1500 Charge press hPa: 12 Inj.-qty. cm3/

difference 1000s.: -3.50...-9.50 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1.Speed 1/min: 1500 TD-travel 3rd speed 1/min: 2600 difference nm: -0.30..-0.50#Shutoff electromagnet Volt: 12
Del. quantity cm3/: 0.00...6.00
1000s.: (0.00...6.00)
5th speed 1/min: 2400 Shutoff electromagnet Volt: 12 Inspection-pump test specifications Test specifications in parentheses Shutoff electromagnet Volt: 12 Timing-device characteristic: Del. quantity cm3/: 10.00...14.00 1000s.: (8.00...16.00) 2nd speed 1/min: 1790 8th speed 1/min: 2300 mm: 5.00...5.80 TD travel Shutoff electromagnet Volt: 12 Del. quantity cm3/: 17.00...27.00 1000s.: (16.00...28.00) mm: (4.70...6.10) Shutoff electromagnet Volt: 12 3rd speed 1/min: 1250 TD travel mm: 2.20...2.60 9th speed 1/min: 2100 Shutoff mm: (1,70...3,10)electromagnet Volt: 12 Del. quantity cm3/: 30.00...32.00 Shutoff 1000s.: (28.80...33.20) 1/min: 1250 electronagnet Volt: 12 1/min: 1000 4th speed 12th speed mm: 0.70...1.50 TD travel Shutoff mm: (0.40...1.80) Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 32.30...35.30 1000s.: (30.80...36.80) 1st speed 1/min: 1000 Supply-pump bar: 5.00...5.60 pressure Shutoff Mech. shutoff: electromagnet Volt: 12 2nd speed 1/min: 1250 2nd speed Electr. shutoff: Supply-pump bar: 5.70...6.30 pressure 1st speed 1/min: 415 Del. quantity cm3/: 0.00...3.00 Shutoff electromagnet Volt: 12 3rd speed 1/min: 2100 1000s.: (0.00...3.00) Shutoff Supply-pump electromagnet volt: bar: 7.20...7.80 pressure Shutoff Damper set qty.: electromagnet Volt: 12 LFG~setting: Overlow quantity at overflow valve: solidale con carcassa: Idle delivery: 1/min: 600 1st speed Shutoff 1st speed 1/min: 415 electromagnet Volt: 12 Shutoff : 41.70...83.40 electromagnet Volt: 12 Del. quantity cm3/: 7.00...9.00 Overflow cm3/10s: (26.80...98.40) 1/min: 2100 quantity 2nd speed 1000s.: (4.00...12.00) Shutoff electromagnet Volt: 12 Residual: : 55.60...152.90 Overflow cm3/10s: (41.70...167.90) quantity 1/min: 540 1.Rotacao Shutoff Delivery-quant. and breakaway char.: electromagnet Volt: 12

Del. quantity cm3/: 6.50...7.50 1000s.: (5.00...9.00) 2nd speed 1/min: 490 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.80...8.80 1000s.: (5.30...10.30) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1500 1st speed Inj.-qty. cm3/ : -6.0...-8.0 " difference 1000s .: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 cm3/: 0.0...+3.0 Z' Inj.-gty. difference 1000s .: -Shutoff electromagnet Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1500 : -1.9..-2.3 Z' TD-travel difference mm: (-1.5...-2.70) Shutoff electromagnet Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1500 Supply pump-: -0.10..-0.30" pressure difference bar: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Supply pump-: -0.8...-1.2 ' pressure difference bar: -Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 17.00...37.00 1000s.: (17.00...37.00) 4th speed 1/min: 100

Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: 3.2...3.4 KF mm: 5.6...6.0 mm: 1.3...1.5 MS mm: 4.9 SVS max. mm: 32.8...34.8 Ya mm: 60.5...71.5

Ajustement Potentiometer:

Supply voltage
pot. volt: 5.0
Output volt
pot. volt: 0.8

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

On initial measurement, screw in residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out residual-quantity adjusting screw 2 mm.

Z = Absolute delivery

Note inst. in remarks column

Test scheet : VWW Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE5/8F2100L545-4 Type number : **0** 460 485 018

Customer Part-No. :

Customer-specific information

Customer

: 2,4L SD T4 Engine KLIMA

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil •0 return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Openina :

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing device travel

1/min: 1250 Speed

Setting value mm: 2.20...2.60

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1250

Setting value bar: 5.70...6.30

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1250

Del. quantity cm3/

1000s.: 36.00...37.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.0

1000s.: (3.0)

Low-idle speed regulation

1/min: 415 Speed

Del. quantity cm3/

1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

1/min: 540 Speed

Del. quantity cm3/

1000s.: 6.50...7.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity_cm3/: 35.00...85.00

1000s.: 35.00 mind

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1500 Speed

cm3/Inj.-qty.

difference 1000s.: -3.50...-9.50 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1.Speed 1/min: 1500

1/min: 2600 TD-travel 3rd speed difference mm: -0.30..-0.50# Shutoff electromagnet Volt: 12
Del. quantity cm3/: 0.00...6.00
1000S:: (0.00...6.00)
5th speed 1/min: 2400 Shutoff electromagnet Volt: 12 Inspection-pump test specifications Test specifications in parentheses Shutoff electromagnet Volt: 12
Del. quantity cm3/: 10.00...14.00
1000S.: (8.00...16.00) Timing-device characteristic: 2nd speed 1/min: 1790 1/min: 2300 8th speed mm: 5.30...6.10 TD travel Shutoff mm: (5.00...6.40) Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 30.00...32.00 1000s.: (28.80...33.20) Shutoff electromagnet Volt: 12 1/mir: 1000 4th speed 1/min: 1250 12th speed TD travel mm: 0.30...1.10 Shutoff electromagnet Volt: 12
Del. quyntity cm3/: 36.00...37.00
1000s.: (34.30...38.70) mm: (0.00...1.40) Shutoff electromagnet Volt: 12 1/min: 600 20th speed Supply-pump pressure characteristic: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 32.30...35.30 1000s.: (30.80...36.80) 1/min: 1000 1st speed Supply-pump bar: 5.00...5.60 pressure Shutoff Mech. shutoff: electromagnet Volt: 12 1/min: 1250 2nd speed Electr. shutoff: Supply-pump bar: 5.70...6.30 pressure 1/min: 415 1st speed Shutoff Del. quantity cm3/: 0.00...3.00 electromagnet Volt: 12 1000s.: (0.00...3.00) 1/min: 1790 3rd speed Shutoff Supply-pump electromagnet volt: bar: 7.20...7.80 pressure Shutoff Damper set qty.: electromagnet Volt: 12 LFG-setting: Overlow quantity at overflow valve: solidale con carcassa: Idle delivery: 1/min: 600 1st speed Shutoff 1/min: 415 1st speed electromagnet Volt: 12 Snutoff : 41.70...83.40 Overflow electromagnet Volt: 12 cm3/10s: (26.80...98.40) Del. quantity cm3/: 7.00...9.00 quantity 2nd speed 1/min: 2100 1000s.: (4.00...12.00) Shucoff electromagnet Volt: 12 High Idle: : 55.60...152.90 Overflow quantity cm3/10s: (41.70...167.90) 1/mi: 450 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.00...9.00 Delivery-quant. and breakaway char.: 1000s.: (4.00...12.00)

Residual: 1/min: 540 1.Rotacao Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.50...7.50 1000s.: (5.00...9.00) 1/min: 490 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.80...8.80 1000S:: (5.30...10.30) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1st speed 1/min: 1500 Inj.-qty. cm3/ : -6.0...-8.0 " difference 1000s.: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 cm3/: 0.0...+3.0 Z' Inj.-qty. difference 1000s.: -Shutoff electromagnet Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1500 TD-travel : -1.7...-2.1 ' mm: (-1.3...-2.50)' difference Shutoff electromagnet Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1500 Supply pumppressure : -0.10..-0.30" difference bar: -Shutoff electromagnet Volt: 12 1/min: 1500 2nd speed Supply pump-: -0.8...-1.2 ' pressure difference bar: -Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000S.: (35.00...85.00)

1/min: 380

Shutoff electromagnet Volt: 12 Del. quantity cm3/: 17.00...37.00 1**0005.:** (17.**00...3**7.00) 1/min: 100 4th speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 KF mm: 5.6...6.0 mm: 1.3...1.5 MS SVS max. mm: 1.9 mm: 32.8...34.8 mm: 60.5...71.5 Remarks: Ya = Distance between VE flange and speed-control lever in idle Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end On initial measurement, screw in residual-quantity adjusting screw 2 mm. Following pump adjustment, screw out

residual-quantity adjusting screw 2 mm.

Z = Absolute delivery

2nd speed

Note inst. in remarks column

Test scheet : VWW Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE5/8F2100L457-1 : 0 460 485 019 Type number

Customer Part-No. :

Customer-specific information

Customer

: 2,4L WK-SD T4 CAMPER Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Openina |

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500

Setting value mm: 4.10...4.50

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1500

Setting value bar: 7.10...7.70

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1250

Del. quantity cm3/

1000s.: 35.00...36.0C

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.0 1000s.: (3.0)

Low-idle speed regulation

1/min: 415 Speed

Del. quantity cm3/

1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

1/min: 540 Speed Del. quantity cm3/

1000s.: 6.50...7.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2400

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 35.00...85.00 mind 1000s.: 35.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery: Inj.-qty.dif.measurement:

1/min: 1500 Speed

cm3/Inj.-aty.

difference 1000s.: -7.50..-13.50 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1.Speed 1/min: 1500

	Residual:
Delivery-quant. and breakaway char.:	+
quantity cm3/10s: (40.70167.90)	Del. quantity cm3/: 7.009.00 1000s.: (4.0012.00)
electromagnet Volt: 12 Overflow : 55.60152.90	+ Shutoff + electromagnet Volt: 12
Shutoff	1st speed 1/min: 415
2nd speed 1/min: 2100	
Overflow : 41.7083.40 guantity cm3/10s: (26.8098.30)	<pre>f solidate con carcassa: Idle delivery:</pre>
electromagnet Volt: 12	LFG-setting:
1st speed 1/min: 600 Shutoff	Damper set qty.:
Overlow quantity at overflow valve:	+ electromagnet volt: -
electromagnet Volt: 12	1000S.: (0.003.00) Shutoff
Shutoff	+ Del. quantity cm3/: 0.003.00
Supply-pump pressure bar: 7.808.40	† 1st speed 1/min: 415
3rd speed 1/min: 1790	+ Electr. shutoff:
electromagnet Volt: 12	T recii. Silatoff.
pressure bar: 7.107.70 Shutoff	+ Mech. shutoff:
Supply-pump	10008: (30.3036.30)
electromagnet Volt: 12 2nd speed 1/min: 1500	+ electromagnet Volt: 12 + Del. quantity cm3/: 31.8034.80
Shutoff	+ Shutoff
pressure bar: 5.906.50	+ 20th speed 1/min: 600
1st speed 1/min: 1100 Supply-pump	bel. quyntity cm3/: 35.0036.00 1000s.: (33.3037.70)
Supply-pump pressure characteristic:	+ Shutoff + electromagnet Volt: 12
Simply-pimp processing changeteristics	12th speed 1/min: 1250
electromagnet Volt: 12	+ 1000s.: -
mm: (0.902.30) Shutoff	electromagnet Volt: 12 Del. quantity cm3/: 29.5035.50
TD travel mm: 1.202.00	+ Shutoff
4th speed 1/min: 1100	+ 10th speed 1/min: 1850
Shutoff electromagnet Volt: 12	Del. quantity cm3/: 28.5030.50 1000s.: (27.3031.70)
mm: (3.605.00)	+ electromagnet Volt: 12
TD travel mm: 4.104.50	+ Shutoff
3rd speed 1/min: 1500	1000S:: (16.0028.00) + 9th speed 1/min: 2100
Shutoff electromagnet Volt: 12	Del. quantity cm3/: 17.0027.00
mm: (5.607.00)	+ electromagnet Volt: 12
TD travel mm: 5.906.70	+ Shutoff
2nd speed 1/min: 1790	1000s.: (8.0016.00) 8th speed 1/min: 2300
Timing-device characteristic:	electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00
Test specifications in parentheses	+ Shutoff
Inspection-pump test specifications	1000S.: (0.006.00) + 5th speed 1/min: 2400
electromagnet Volt: 12	+ Del. quantity cm3/: 0.006.00
difference mm: -1.101.30# Shutoff	+ Shutoff + electromagnet Volt: 12
ID-trave(+ 2nd speed 1/min: 2600

1.Rotacao 1/min: 540 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.50...7.50 1000s.: (5.00...9.00) 2nd speed 1/min: 490 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.80...8.80 1000s.: (5.30...10.30) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1500 1st speed Inj.-qty. cm3/ : -6.0...-8.0 " difference 1000s.: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 cm3/: C.O...+3.0 Z' Inj.-qty. difference 1000s.: -Shutoff electromagnet Volt: 12 TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1500 : -1.9...-2.3 ' mm: (-1.5...-2.7)' TD-travel difference Shutoff electromagnet Volt: 12 SP press.—dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1500 Supply pump-: -0.10...0.30" pressure difference bar: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Supply pump-: -0.8...-1.2 ' pressure difference bar: -Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00) 2nd speed 1/min: 380

Del. quantity cm3/: 17.00...37.00 1000s.: (17.00...37.00) 1/min: 100 4th speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00) Shutoff electromagnet: Cut-in min voltage : 10.0 Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 mm: 5.6...6.0 KF mm: 1.3...1.5 MS mm: 32.8...34.8 mm: 60.5...71.5 Ya Yb Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

Pump with slave plunger

Z = Absolute delivery

On initial measurement, screw in residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out residual-quantity adjusting screw 2 mm.

Shutoff

electromagnet Volt: 12

Note inst. in remarks column

Test scheet : REN Edition : 03,94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/9F2250R449 : 0 460 494 297 Type number

Customer Part-No. :

Customer-specific information

Customer : RNUR

: J8S - 786 R21 Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil °C return temp.

with thermometer: 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Opening

bar: 130.00...133.00 Pressure

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length

Start of delivery mm: -Prestroke (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Charge press. hPa: 1000

Setting value mm: 3.40...3.80

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250 Speed

Charge press hPa: 1000 Setting value bar: 5.10...5.70

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1250 Charge press. hPa: 1000

Del. quantity cm3/ 1000s.: 51.00...52.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0)

Full-load del. w/out charge press.:

1/min: 750

Del. quantity cm3/ 1000s.: 38.50...39.50

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

1/min: 425

Del. quantity cm3/

1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2,5)

Residual-Delivery Setting

Speed 1/min: 525

Del. quantity cm3/

1000s.: 3.50...7.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2500 Charge press hPa: 1000

Del. quantity cm3/

1000s.: 7.50...13.50

Shutoff

electromagnet Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 50.00...90.00 mind 1000s.: 50.00

Shutoff

electromagnet Volt: 12

M27

Supply-pump Load-dependent start of delivery: pressure bar: 7.50...8.10 Inj.-qty.dif.measurement: Shutoff electromagnet Volt: 12 1/min: 1250 Speed Charge press hPa: -Overlow quantity at overflow valve: Inj.-qty. cm3/difference 1000s.: -7.50..-11.50 # 1st speed 1/min: 750 Charge press. hPa: 1000 electromagnet Volt: 12 Shutoff TD-travel dif.measurement electromagnet Volt: 12 correttore anticipo iniezione (SV) 1.Speed 1/min: 1250 : 41.70...86.10 Overflow quantity cm3/10s: (26.70...101.10) Charge press hPa: -2nd speed 1/min: 2125 TD-travel Charge press. hPa: 1000 difference mm: -1.2...-1.4 # Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12 Overflow : 55.60...139.00 cm3/10s: (40.60...154.00) quantity Inspection nump test specifications Test specifications in parentheses Delivery-quant. and breakaway char.: Timing-device characteristic: 1/min: 750 1nd speed 1/min: 2125 hPa: 1000 Charge-air pressure-setting 2nd speed Charge press hPa: 300 point mm: 6.80...7.60 mm: (6.50...7.90) TD travel LDA-stroke mm: 6.4 Shutoff Shutoff electromagnet Volt: 12 3rd speed 1/min: 1250 Charge press hPa: 1000 TD travel mm: 3.40...3.80 mm: (3.10...4.50) Charge press. hPa: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 Shutoff electromagnet Volt: 12 4th speed 1/min: 1000 1000s.: (0.00...3.00) Charge press hPa: 1000 5th speed 1/min: 2500 TD travel mm: 2.10...2.90 Charge press. hPa: 1000 mm: (2.00...3.40) Shutoff electromagnet Volt: 12
Del. quantity cm3/: 7.50...13.50
1000S.: (6.50...14.50)
8th speed 1/min: 2350 Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Charge press. hPa: 1000 1st speed 1/min: 1000 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 29.50...37.50
1000S.: (28.50...38.50)
9th speed 1/min: 2125
Charge press. hPa: 1000
Shutoff Charge press. hPa: 1000 Supply-pump bar: 4.40...5.00 pressure Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: 1000 electromagnet Volt: 12 Del. quantity cm3/: 48.10...50.10 1000s.: (46.80...51.40) Supply-pump pressure bar: 5.10...5.70 Shutoff 1/min: 1625 11th speed electromagnet Volt: 12 Charge press. hPa: 1000 3rd speed 1/min: 2125 Shutoff Charge press. hPa: 1000 electromagnet Volt: 12

Del. quantity cm3/: 48.9050.90	+ Shutoff
1000\$:: (47.6052.20)	electromagnet Volt: 12
12th speed 1/min: 1250	Del. quantity cm3/: 3.507.50
Charge press. hPa: 1000	+ 1000s.: (3.507.50)
Shutoff	+
electromagnet Volt: 12	+ Load-dependent start of delivery:
Del. quyntity cm3/: 51.0052.00	+ Injqty.dif.measurement:
1000S.: (49.2053.80)	1-
15th speed 1/min: 1000 Charge press. hPa: 1000	1st speed 1/min: 1250
Shutoff	tharge press. tiPa: - Injqty. cm3/ : -4.56.5 "
electromagnet Volt: 12	difference 1000s.: -
Del. quantity cm3/: 50.6053.60	Shutoff
1000s.: (49.1055.10)	+ electromagnet Volt: 12
16th speed 1/min: 1250	+ 2nd speed 1/min: 1250
Charge press. hPa: -	Charge press. hPa: -
Shutoff	+ Injqty. cm3/: +2.0+8.0'Z + difference 1000S.: -
electromagnet volt: 12 Del. quantity cm3/: 36.6039.60	† difference 1000s.: -
1000H.: (35.1041.10)	TD-travel dif.measurement:
18th speed 1/min: 750	correttore anticipo iniezione (SV)
Charge press. hPa: -	+ 1st speed 1/min: 1250
Shutoff	+ Charge press. hPa: -
electromagnet Volt: 12	+ TD-travel : -1.92.7
Del. quantity cm3/: 38.5039.50	difference mm: -
1000s.: (36.0042.00)	+ Shutoff
Mech. shutoff:	electromagnet Volt: 12
incent diagon.	SP pressdif.measurement:
Electr. shutoff:	+ pompa di mandata (FP):
	+ 1st speed 1/min: 1250
1st speed 1/min: 425	+ Charge press. hPa: -
Del. quantity cm3/: 0.003.00	+ Supply pump-
1000s.: (0.003.00)	+ pressure : -0.10.3 "
Shutoff electromagnet volt: -	+ difference bar: - + Shutoff
ctetti dilagilet vott.	+ electromagnet Volt: 12
Damper set qty.:	- Cectionagnet vott. 12
•	+ Part-load del.at 3rd injqty.
LFG-setting:	+ terza fermo della portata
solidate con carcassa:	+ stop (EGR set)
Idle delivery:	+ scarico) (ARF)
1st speed 1/min: 425	+ gaz d'échappement-ARF) + Spacing mm: 12.0
Shutoff	Spacing mm: 12.0
electromagnet Volt: 12	1st speed 1/min: 825
Del. quantity cm3/: 13.0017.00	+ Charge press. hPa: 1000
1000s.: (11.0019.00)	+ Shutoff
44.° 5 11	+ electromagnet Volt: 12
High Idle:	pel. quantity cm3/: 29.5030.50
1st speed 1/mi: 500	† 1000s.: (27.5032.50)
Shutoff	Automatic starting fuel delivery:
electromagnet Volt: 12	- notoliate starting fuet detivery:
Del. quantity cm3/: 6.0010.00	1st speed 1/min: 250
1000s.: (4.0012.00)	+ Shutoff
Don't don't	+ electromagnet Volt: 12
Residual:	+ Del. quantity cm3/: 50.0090.00
1.Rotacao 1/min: 525	† 1000s.: (50.0090.00)
1 - NO COCOO 1 (1) (1) 11 12 26 2	T

NO1

1/min: 350 2nd speed

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 20.00...50.00

1000s.: (20.00...50.00)

4th speed 1/min: 100

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 50.00...90.00

1000s.: (50.00...90.00)

Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

mm: 3.6...3.8 K KF mm: KOT MS mm: 1.3...1.5

SVS max. mm: 2.8 LDA stroke mm: 6.4

mm: LD=5.6..6.4 XK mm: 38.8...42.8 mm: 36.2...45.8 Ya Yb

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

On initial measurement, screw in residual-quantity adjusting screw 1 mm.

Screw out residual-quantity adjusting screw 1 mm after setting pump.

Microswitch Gap A = 1.0...2.5 mm Z = Absolute delivery

N₀2

Note inst. in remarks column

Test scheet : REN Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/9F2250R449-1 : 0 460 494 298 Type number

Customer Part-No. :

Customer-specific information

Customer

Engine : J8S - 786 R21

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating oil •c return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Opening |

Pressure bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Speed Charge press. hPa: 1000

Setting value mm: 3.40...3.80

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250 Speed Charge press hPa: 1000

Setting value bar: 5.10...5.70

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 51.00...52.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 750

Del. quantity cm3/ 1000s.: 38.50...39.50

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 425

Del. quantity cm3/ 1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2,5)

Residual-Delivery Setting

Speed 1/min: 525

Del. quantity cm3/

1000s.: 3.50...7.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

1/min: 2500 Speed hPa: 1000 Charge press

Del. quantity cm3/

1000s.: 7.50...13.50

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 50.00...90.00

1000s.: 50.00 mind

Shutoff

electromagnet Volt: 12

N₀3

Supply-pump Load-dependent start of delivery: bar: 7.50...8.10 pressure Inj.-qty.dif.measurement: Shutoff electromagnet Volt: 12 1/min: 1250 Speed Charge press hPa: -Overlow quantity at overflow valve: Inj.-qty. cm3/difference 1000s.: -7.50..-11.50 # 1st speed 1/min: 750 Charge press. hPa: 1000 Shutoff Shutoff electromagnet Volt: 12 TD-travel dif.measurement electromagnet Volt: 12 correttore anticipo iniezione (SV) 1.Speed 1/min: 1250 : 41.70...86.10 Overflow quantity cm3/10s: (26.70...101.10) Charge press hPa: -1/min: 2125 2nd speed TD-travel Charge press. hPa: 1000 difference mm: -1.2...-1.4 # Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12 : 55.60...139.00 Overflow cm3/10s: (40.60...154.00) quantity Inspection-pump test specifications Test specifications in parentheses Delivery-quant. and breakaway char.: Timing-device characteristic: 1nd speed 1/min: 750 2nd speed 1/min: 2125 Charge-air pressure-setting hPa: 1000 Charge press point hPa: 300 mm: 6.80...7.60 TD travel mm: 6.4 LDA-stroke mm: (6.50...7.90) Shutoff electromagnet Volt: 12
Del. quantity cm3/: 45.50...46.50
1000s.: (43.00...49.00) Shutoff electromagnet Volt: 12 3rd speed 1/min: 1250 Charge press hPa: 1000 1/min: 2700 2nd speed TD travel mm: 3.40...3.80 Charge press. hPa: 1000 mm: (3.10...4.50) Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000S.: (0.00...3.00) 5th speed 1/min: 2500 electromagnet Volt: 12 4th speed 1/min: 1000 Charge press hPa: 1000 TD travel mm: 2.10...2.90 Charge press. hPa: 1000 Shutoff mm: (2.00...3.40)Shutoff electromagnet Volt: 12 electromagnet Volt: 12 Del. quantity cm3/: 7.50...13.50 1000s.: (6.50...14.50) 1/min: 2350 Supply-pump pressure characteristic: 8th speed Charge press. hPa: 1000 1st speed 1/min: 1000 Shutoff Charge press. hPa: 1000 Supply-pump pressure bar: 4.40...5.00 Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: 1000 Shutoff Charge press. hPa: 1000 electromagnet Volt: 12 Supply-pump Del. quantity cm3/: 48.10...50.10 pressure bar: 5.10...5.70 1000s.: (46.80...51.40) Shutoff 1/min: 1625 11th speed electromagnet Volt: 12 Charge press. hPa: 1000 3rd speed 1/min: 2125 Shutoff Charge press. hPa: 1000 electromagnet Volt: 12

Del. quantity cm3/: 48.9050.90 1000s.: (47.6052.20) 12th speed 1/min: 1250 Charge press. hPa: 1000 Shuroff	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 3.507.50 1000s.: (3.507.50)
electromagnet Volt: 12 Del. quyntity cm3/: 51.0052.00 1000S.: (49.2053.80)	Load-dependent start of delivery: Injqty.dif.measurement:
15th speed 1/min: 1000 Charge press. hPa: 1000 Shutoff	1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/ : -4.56.5 "
electromagnet Volt: 12 Del. quantity cm3/: 50.6053.60 1000S.: (49.1055.10) 16th speed 1/min: 1250	difference 1000s.: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250
Charge press. hPa: - Shutoff electromagnet volt: 12 Del. quantity cm3/: 36.6039.60	Charge press. hPa: - Injqty. cm3/: +2.0+8.0'Z difference 1000S.: -
1000H.: (35.1041.10) 18th speed 1/min: 750 Charge press. hPa: - Shutoff	TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed
electromagnet Volt: 12 Del. quantity cm3/: 38.5039.50 1000S.: (36.0042.00)	TD-travel : -1.92.7 ' difference mm: - Shutof; electromagnet Volt: 12
Mech. shutoff:	_
Electr. shutoff:	SP pressdif.measurement: pompa di mandata (FP): 1st speed = 1/min: 1250
1st speed 1/min: 425 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)	Charge press. hPa: - Supply pump- pressure : -0.10.3 "
Shutoff electromagnet volt: -	difference bar: - Shutoff
Damper set qty.:	electromagnet Volt: 12
LFG-setting: solidale con carcassa: Idle delivery:	Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF)
1st speed 1/min: 425 Shutoff	gaz d'échappement-ARF) Spacing mm: 12.0
electromagnet Volt: 12 Del. quantity cm3/: 13.0017.00 1000s.: (11.0019.00)	1st speed 1/min: 825 Charge press. hPa: 1000 Shutoff
High Idle:	electromagnet Volt: 12 Del. quantity cm3/: 29.5030.50 1000S.: (27.5032.50)
1st speed 1/mi: 500 Shutoff	Automatic starting fuel delivery:
electromagnet Volt: 12 Del. quantity cm3/: 6.0010.00 1000S.: (4.0012.00)	1st speed 1/min: 250 Shutoff
Residual:	electromagnet Volt: 12 Del. quantity cm3/: 50.0090.00
1.Rotacao 1/min: 525	1000s.: (50.0090.00)

N05

1/min: 350 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 20.00...50.00 1000s.: (20.00...50.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 50.00...90.00 1000s.: (50.00...90.00) Shutoff electromagnet: Cut-in min voltage : 10.0 : 12.0 Rated voltage

Mounting and assembly dimensions:

Designation

mm: 3.6...3.8 K KF mm: KOT mm: 1.3...1.5 MS SVS max. mm: 2.8 LDA stroke mm: 6.4 XK mm: LD=5.6..6.4 mm: 38.8...42.8 Ya Yb mm: 36.2...45.8

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

On initial measurement, screw in residual-quantity adjusting screw 1 mm.

Screw out residual-quantity adjusting screw 1 mm after setting pump.

Microswitch
Gap A = 1.0...2.5 mm

Z = Absolute delivery

NO6

Note inst. in remarks column

Test scheet : VWW Edition : 03.94

replaces

Calibrating oil : ISO-4113

: VE4/9F2250R328-7 Injection pump Type number : 0 460 494 312

Customer Part-No.:

Customer-specific information

Customer

: 1.61 TD/LLK B3 Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating oil •0 return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening |

Pressure bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1500 Charge press. hPa: 750

Setting value mm: 3.80...4.20

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1500 Speed Charge press hPa: 750

Setting value bar: 5.60...6.20

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1500 Charge press. hPa: 750

Del. quantity cm3/

1000s.: 42.00...43.00

Shutoff

electromagnet Volt: 12 cm3/: 2.5 Dispersion 1000s.: (3.0)

Full-load del. w/out charge press.:

1/min: 700 Speed

Del. quantity cm3/ 1**000**s.: 27.60...28.20

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 465

Del. quantity cm3/

100Cs.: 12.00...14.0G

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000s.: (3.0)

Residual-Delivery Setting

1/min: 615 Speed

Del. quantity cm3/

1000s.: 4.00...5.00

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2525 Charge press hPa: 750

Del. quantity cm3/

1000s.: 13.00...17.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 35.00...85.00

1000s.: 35.00 mind

Shutoff

electromagnet Volt: 12

N07

Inspection pump test specifications Delivery-quant. and breakaway char.: Test specifications in parentheses Timing-device characteristic: 1/min: 900 1nd speed Charge-air pressure-setting point hPa: 300 1/min: 2250 hPa: 750 2nd speed Charge press LDA-stroke mm: 6.10...6.90 mm: (5.80...7.20) TD travel Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.10...34.70 1000S.: (31.40...37.40) Shutoff electromagnet Volt: 12 3rd speed 1/min: 1500 1/min: 2650 2nd speed Charge press hPa: 750 TD travel mm: 3.80 Charge press. hPa: 750 Shutoff nm: 3.80...4.20 mm: (3.30...4.70) Shutoff electromagnet Volt: 12 4th speed 1/min: 1000 Charge press hPa: 750 Charge press. hPa: 750 mm: 1.80...2.60 mm: (1.50...2.90) TD travel Shutoff electromagnet Volt: 12 Del. quantity cm3/: 13.00...17.00 1000s.: (11.00...19.00) Shutoff electromagnet Volt: 12 Charge press. hPa: 750 Shutoff Supply-pump pressure characteristic: electromagnet Volt: 12 Del. quantity cm3/: 26.50...36.50 1000s.: (25.50...37.50) 1st speed 1/min: 700 Charge press. hPa: 750 Supply-pump pressure bar: 3.30...3.90 1/min: 2250 9th speed Shutoff Charge press. hPa: 750 electromagnet Volt: 12 2nd speed 1/min: 1500 Charge press. hPa: 750 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 36.30...38.30 1000s.: (35.10...39.50) 12th speed 1/min: 1500 Supply-pump bar: 5.60...6.20 pressure Charge press. hPa: 750 Shutoff Shutoff electromagnet Volt: 12 3rd speed 1/min: 2250 Charge press. hPa: 750 electromagnet Volt: 12 Del. quyntity cm3/: 42.00...43.00 1000s.: (40.30...44.70) Supply-pump pressure bar: 7.70...8.30 1/min: 500 16th speed Charge press. hPa: -Shutoff Shutoff electromagnet Volt: 12 Overlow quantity at overflow valve: 1/min: 700 1st speed Charge press. hPa: - Shutoff Charge press. hPa: Shutoff electromagnet Volt: 12
Del. quantity cm3/: 27.60...28.20
1000S.: (24.90...30.90)
20th speed 1/min: 700
Charge press. hPa: 750
Shutoff electromagnet Volt: 12 Overflow : 41.70...83.40 cm3/10s: (27.80...97.30) quantity 1/min: 2250 2nd speed Charge press. hPa: 750 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.00...37.00 1000s.: (32.50...38.50) electromagnet Volt: 12 : 55.60...152.90 Overflow quantity cm3/10s: (41.70...167.90)

21th speed 1/min: 400 Charge press. hPa: -

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 31.90...34.90 1000s.: (31.70...35.10)

Mech. shutoff:

Electr. shutoff:

1st speed 1/min: 465

Del. quantity cm3/: 0.00...3.00

1000s.: (0.00...3.00)

Shutoff

electromagnet volt: -

Damper set qty.:

LFG-setting:

solidate con carcassa:

Idle delivery:

1st speed 1/min: 465

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 12.00...14.00

1000s.: (7.50...18.50)

High Idle:

1st speed 1/mi: 515

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 12.00...14.00

1000s.: (8.00...18.00)

Residual:

1/min: 615 1.Rotacao

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 4.00...5.00

1000s.: (1.50...7.50)

2nd speed 1/min: 565

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 5.50...7.50 1000s.: (3.00...10.00)

Automatic starting fuel delivery:

1st speed 1/min: 200

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00

1000s.: (35.00...85.00)

4th speed

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 35.00...85.00 1000s.: (35.00...85.00)

Shutoff electromagnet:

Cut-in

min voltage : 10.0

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

inm: K1

mm: 5.6...6.0 mm: 1.3...1.5 mm: 3.9 KF MS

SVS max.

mm: 37.6...41.6 Ya

mm: 49.9...63.3

Remarks:

Operate control lever after each manifold-pressure compensator pressure

change.

Ya = Distance between VE flange and speed-control lever in idle

position

Measurement point = edge of control

lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed

position

Measurement point = edge of control

lever on distributor-head end

On initial measurement, screw in residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out residual-quantity adjusting screw 2 mm.

1/min: 100

Note inst. in remarks column

Test scheet : VWW Edition : 03.94 replaces

Calibrating oil : ISO-4113

: VE4/9F2300R433-3 Injection pump

Type number **: 0 460 494 314**

Customer Part-No. :

Customer-specific information

Customer

Engine : 1,9 L UD -A3

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil °C return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening |

Pressure bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Charge press. hPa: 750

Setting value mm: 4.30...4.50

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250 Speed Charge press hPa: 750

Setting value bar: 5.40...6.00

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

Speed 1/min: 1250 Charge press. hPa: 750

Del. quantity cm3/

1**000s.: 50.0**0...51.00

Shutoff

electromagnet Volt: 12 cm3/: 2.5 Dispersion

1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 450

Det. quantity cm3/

1000s.: 37.20...43.20

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 450

Del. quantity cm3/

1000s.: 16.00...18.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

1/min: 550 Speed

Del. quantity cm3/

1000s.: 7.00...8.00

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2600 hPa: 750 Charge press Del. quantity cm3/ 1000S.: 9.00...13.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100

Del. quantity cm3/: 37.0...43.00

1000s.: 37.0 mind

Shutoff

electromagnet Volt: 12

N10

Supply-pump Load-dependent start of delivery: pressure bar: 7.40...8.00 Inj.-qty.dif.measurement: Shutoff electromagnet Volt: 12 1/min: 1250 Speed Charge press hPa: -Overlow quantity at overflow valve: Inj.—qty. cm3/ difference 10005:: -7.0...-11.0 # ist speed 1/min: 700 Charge press. hPa: 750 Shutoff Shutoff electromagnet Volt: 12 TD-travel dif.measurement electromagnet Volt: 12 correttore anticipo iniezione (SV) 1.Speed 1/min: 1250 : 41.70...86.10 Overflow cm3/10s: (29.10...98.60) quantity 2nd speed 1/min: 2100 Charge press hPa: -TD-travel Charge press. hPa: 750 mm: -1.9...-2.1 # difference Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12 Overflow : 55.60...152.90 cm3/10s: (41.70...167.90) guantity Inspection-pump test specifications Test specifications in parentheses Delivery-quant. and breakaway char.: Timing-device characteristic: 1/min: 2750 2nd speed Charge press. hPa: 750 Shutoff 2nd speed 1/min: 2100 hPa: 750 Charge press electromagnet Volt: 12
Del. quantity cm3/: 0.00...3.00
1000S.: (0.00...3.00)
5th speed 1/min: 2600
Charge press. hPa: 750 mm: 8.00...8.60 TD travel mm: (7.60...9.00) Shutoff electromagnet Volt: 12 3rd speed 1/min: 1250 Charge press hPa: 750 Shutoff mm: 4.30...4.50 TD travel mm: (3.70...5.10) Shutoff electromagnet Volt: 12 4th speed 1/min: 750 Charge press hPa: 750 mm: 1.50...2.10 mm: (1.10...2.50) electromagnet Volt: 12
Del. quantity cm3/: 32.50...42.50
1000S.: (31.50...43.50)
9th speed 1/min: 2100 TD travel Shutoff electromagnet Volt: 12 Charge press. hPa: 750 Supply-pump pressure characteristic: Shutoff 1st speed 1/min: 750 Charge press. hPa: 750 Supply-pump bar: 4.30...4.90 pressure Shutoff Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 electromagnet Volt: 12 Del. quyntity cm3/: 50.00...51.00 1000s.: (48.30...52.70) Charge press. hPa: 750 cutn speed 1/min: 700 Charge press. hPa: 750 Shutoff Supply-pump pressure bar: 5.40...6.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 43.50...46.50 1000\$:: (42.80...47.20) electromagnet Volt: 12 3rd speed 1/min: 2100 Charge press. hPa: 750 1/min: 450

21th speed

Charge press. hPa: -	TD-travel dif.measurement:
Shutoff - 12	correttore anticipo iniezione (SV):
electromagnet Volt: 12 Del. quantity cm3/: 37.2043.20	1st speed 1/min: 1250
10008:: (34.7045.70)	Charge press. hPa: - TD-travel : -2.502.9 '
10003:. (34:10:::4):/0	difference mm: -
Mech. shutoff:	Shutoff
+	electromagnet Volt: 12
Electr. shutoff:	·
Antonna di Alaine (50	SP pressdif.measurement:
1st speed 1/min: 450	pompa di mandata (FP):
Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)	1st speed 1/min: 1250
Shutoff	Charge press. hPa: - Supply pump-
electromagnet volt: -	pressure : -0.10.3 "
	difference bar: -
Damper set qty.:	Shutoff
+	electromagnet Volt: 12
LFG-setting:	2nd speed 1/min: 1250
solidate con carcassa:	Charge press. hPa: -
Idle delivery:	Supply pump-
1st speed 1/min: 450	pressure : -1.01.4 '
Shutoff	difference bar: -
electromagnet Volt: 12	Part-load del.at 3rd injgty.
Del. quantity cm3/: 16.0018.00	terza fermo della portata
1000s.: (13.0021.00)	stop (EGR set)
+	scarico) (ARF)
High Idle:	gaz d'échappement-ARF)
+	Spacing mm: 12.0
1st speed 1/mi: 550	
Shutoff	1st speed 1/min: 1000
electromagnet Volt: 1/	
electromagnet Volt: 12	Charge press. hPa: 750
Del. quantity cm3/: 16.0018.00	Shutoff
	Shutoff electromagnet Volt: 12
Del. quantity cm3/: 16.0018.00 1000S.: (13.0021.00)	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00
Del. quantity cm3/: 16.0018.00	Shutoff electromagnet Volt: 12
Del. quantity cm3/: 16.9018.00 1000s.: (13.0021.00) Residual:	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00)
Del. quantity cm3/: 16.9018.00 1000s.: (13.0021.00) Residual:	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery:
Del. quantity cm3/: 16.9018.00 1000s.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180
Del. quantity cm3/: 16.9018.00 1000s.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.09 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff
Del. quantity cm3/: 16.9018.00 1000s.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.09 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 16.0018.00 1000s.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000s.: (5.509.50)	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00
Del. quantity cm3/: 16.9018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery:	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.09 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 16.0018.00 1000s.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000s.: (5.509.50)	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00)
Del. quantity cm3/: 16.0018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement:	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00) 2nd speed 1/min: 380
Del. quantity cm3/: 16.0018.00 1000s.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000s.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1250	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00) 2nd speed 1/min: 380 Shutoff
Del. quantity cm3/: 16.0018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement:	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 16.9018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/ difference 1000S.: -	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00) 2nd speed 1/min: 380 Shutoff
Del. quantity cm3/: 16.0018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/ : -4.56.5 " difference 1000S.: - Shutoff	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.09 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 31.0051.00 1000S.: (31.0051.00)
Del. quantity cm3/: 16.9018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/: -4.56.5 " difference 1000S.: - Shutoff electromagnet Volt: 12	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.09 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 31.0051.00 1000S.: (31.0051.00) 3rd speed 1/min: 100
Del. quantity cm3/: 16.9018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/: -4.56.5 " difference 1000S.: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.09 1000s.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000s.: (35.0055.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 31.0051.00 1000s.: (31.0051.00) 3rd speed 1/min: 100 Shutoff
Del. quantity cm3/: 16.0018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/: -4.56.5 " difference 1000S.: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: -	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.09 1000s.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000s.: (35.0055.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 31.0051.00 1000s.: (31.0051.00) 3rd speed 1/min: 100 Shutoff
Del. quantity cm3/: 16.0018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/ : -4.56.5 " difference 1000S.: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/: -+0.0+3.0 "	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 31.0051.00 1000S.: (31.0051.00) 3rd speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.0043.00
Del. quantity cm3/: 16.0018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/ : -4.56.5 " difference 1000S.: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/: -+0.0+3.0 ' difference 1000S.: -	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.09 1000s.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000s.: (35.0055.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 31.0051.00 1000s.: (31.0051.00) 3rd speed 1/min: 100 Shutoff
Del. quantity cm3/: 16.9018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/: -4.56.5 " difference 1000S.: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/: -+0.0+3.0 ' difference 1000S.: - Shutoff	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 31.0051.00 1000S.: (31.0051.00) 3rd speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.0043.00 1000S.: (32.5047.50)
Del. quantity cm3/: 16.0018.00 1000S.: (13.0021.00) Residual: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50) Load-dependent start of delivery: Injqty.dif.measurement: 1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/ : -4.56.5 " difference 1000S.: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/: -+0.0+3.0 ' difference 1000S.: -	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 34.0036.00 1000S.: (32.0038.00) Automatic starting fuel delivery: 1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 31.0051.00 1000S.: (31.0051.00) 3rd speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.0043.00

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.6...3.8
KF mm: KOT
MS mm: 1.0...1.4
Ya mm: 37.6...41.6
Yb mm: 49.9...63.3

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Pump in stepped LDA

Note inst. in remarks column

Test scheet : VWW : 03.94 Edition

replaces

Calibrating oil : ISO-4113

: VE4/9F2200R420-14 Injection pump Type number : 0 460 494 323

Customer Part-No. :

Customer-specific information

Customer : VW

: 1.9L UD B3 Klima Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil °٤ return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening |

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Speed

Setting value mm: 3.70...4.10

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250 Speed

Setting value bar: 5.50...6.10

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1250

Det. quantity cm3/

1000s.: 42.00...43.00

Shutoff

electromagnet Volt: 12 cm3/: 2.5 Dispersion 1000s.: (3.0)

Low-idle speed regulation

Speed 1/min: 450

Del. quantity cm3/

1000s.: 9.00...11.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

Speed 1/min: 575

Del. quantity cm3/

1000s.: 5.50...6.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

1/min: 2600 Speed

Del. quantity cm3/

1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 35.00...65.00 mind 1000S.: 35.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery: Inj.-qty.dif.measurement:

1/min: 1250 Speed

cm3/Inj.-qty.

difference 1000s.: -4.0...-10.0 #

Shutoff

electromagnet Volt: 12

TD-travel dif.measurement

correttore anticipo iniezione (SV)

1.Speed 1/min: 1250

TD-travel 1/min: 2750 2nd speed difference mn: -0.6...-0.8 # Shutoff electromagnet Volt: 12
Del. quantity cm3/: 0.00...6.00
10005:: (0.00...6.00)
3rd speed 1/min: 2600 Shutoff electromagnet Volt: 12 Inspection-pump test specifications Test specifications in parentheses Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.0...14.00 10005.: (8.00...16.00) Timing-device characteristic: 1/min: 2000 2nd speed 1/min: 2500 5th speed mm: 6.60...7.40 TD travel Shutoff mm: (6.30...7.70) Shutoff electromagnet Volt: 12
3rd speed 1/min: 1250
TD travel mm: 3.70...4.10
mm: (3.20...4.60) Shutoff Shutoff electromagnet Volt: 12 4th speed 1/min: 750 mm: 1.60...2.40 TD travel Shutoff mm: (1.30...2.70) electromagnet Volt: 12 Del. quantity cm3/: 42.00...43.00 1000s.: (40.30...44.70) 12th speed 1/min: 750 Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Shutoff electromagnet Volt: 12 Del. quyntity cm3/: 33.70...36.70 1000s.: (32.20...38.20) 1st speed 1/min: 750 Supply-pump pressure bar: 4.30...4.90 15th speed 1/min: 400 Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.50...41.50 1000s.: (33.00...44.00) electromagnet Volt: 12 1/min: 1250 2nd speed Supply-pump pressure bar: 5.50...6.10 Shutoff Mech. shutoff: electromagnet Volt: 12 3rd speed 1/min: 2200 Electr. shutoff: Supply-pump pressure bar: 7.70...8.30 1/min: 450 1st speed Shutoff Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) electromagnet Volt: 12 Shutoff Overlow quantity at overflow valve: electromagnet volt: -1st speed 1/min: 400 Damper set qty.: Shutoff electromagnet Volt: 12 LFG-setting: : 41.70...83.40 solidale con carcassa: Overflow | quantity cm3/10s: (27.80...97.30) Idle delivery: 2nd speed 1/min: 2200 Shutoff 1st speed 1/min: 450 electromagnet Volt: 12 Shutoff Overflow : 55.60...152.90 electromagnet Volt: 12 Del. quantity cm3/: 9.00...11.00 1000s.: (6.00...14.00) cm3/10s: (41.70...164.90) quantity Delivery-quant. and breakaway char .: High Idle:

1st speed	
Shutoff	1st speed 1/min: 1000
electromagnet Volt: 12	Shutoff
Del. quantity cm3/: 9.0011.00 + 1000s.: (6.0014.00)	electromagnet Volt: 12
10003 (0.00(4.00)	Del. quantity cm3/: 27.0029.00 1000s.: (25.0031.00)
Residual:	100001. (25.00.1.51.00)
4.5	Automatic starting fuel delivery:
1.Rotacao 1/min: 575	1st speed 1/mins 190
electromagnet Volt: 12	1st speed 1/min: 180 Shutoff
Del. quantity cm3/: 5.506.50	electromagnet Volt: 12
1000\$.: (4.008.00)	Del. quantity cm3/: 35.0075.00
2nd speed 1/min: 525	1000s.: (35.0075.00)
electromagnet Volt: 12	2nd speed 1/min: 380
Del. quantity cm3/: 7.309.30	Shutoff
1000s.: (5.8010.80)	electromagnet Volt: 12
Land-demandant start of delivery	Del. quantity cm3/: 30.0050.00 1000s.: (30.0050.00)
Load-dependent start of delivery: Injqty.dif.measurement:	10005.1 (30.0030.00)
+	4th speed 1/min: 100
1st speed 1/min: 1250 +	Shutoff
Injqty. cm3/ : -5.07.0 " difference 1000s.: -	electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 35.0065.00 1000s.: (35.0065.00)
electromagnet Volt: 12	100031. (37.00103.007
3rd speed 1/min: 1250 +	Shutoff electromagnet:
Inj.—qty. cm3/: 0.0+3.0 'Z difference 1000S.: -	num to
Shutoff +	Cut-in min voltage : 10.0
T	min voicione . IO.O
electromagnet Volt: 12	
1	Rated voltage : 12.0
TD-travel dif.measurement:	
TD-travel dif.measurement: correttore anticipo iniezione (SV):	Rated voltage : 12.0 Mounting and assembly dimensions:
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : -1.82.2 #	Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: 3.23.4
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel :-1.82.2 # difference mm: -	Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel :-1.82.2 # difference mm: - Shutoff	Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel :-1.82.2 # difference mm: -	Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel :-1.82.2 # difference mm: - Shutoff	Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : -1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP):	Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6 Yb mm: 49.963.3
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel :-1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250	Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel :-1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump-	Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6 Yb mm: 49.963.3
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel :-1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250	Rated voltage : 12.0 Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6 Yb mm: 49.963.3 Remarks:
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel	Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6 Yb mm: 49.963.3
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : -1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump- pressure : -0.10.3 " difference bar: - Shutoff electromagnet Volt: 12	Rated voltage : 12.0 Mounting and assembly dimensions: Designation K
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : -1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump- pressure : -0.10.3 " difference bar: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250	Rated voltage : 12.0 Mounting and assembly dimensions: Designation K
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : -1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump- pressure : -0.10.3 " difference bar: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Supply pump-	Rated voltage : 12.0 Mounting and assembly dimensions: Designation K
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : -1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump- pressure : -0.10.3 " difference bar: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250	Rated voltage : 12.0 Mounting and assembly dimensions: Designation K
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel :-1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump- pressure :-0.10.3 " difference bar: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Supply pump- pressure :-1.11.5 ' difference bar: -	Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6 Yb mm: 49.963.3 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel :-1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump- pressure :-0.10.3 " difference bar: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Supply pump- pressure :-1.11.5 ' difference bar: - Part-load del.at 3rd injqty.	Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6 Yb mm: 49.963.3 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : -1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump- pressure : -0.10.3 " difference bar: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Supply pump- pressure : -1.11.5 ' difference bar: - Part-load del.at 3rd injqty. terza fermo della portata	Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6 Yb mm: 49.963.3 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : -1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump- pressure : -0.10.3 " difference bar: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Supply pump- pressure : -1.11.5 ' difference bar: - Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set)	Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6 Yb mm: 49.963.3 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever in rated speed position Measurement point = edge of control
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : -1.82.2 # difference mm: - Shutoff electromagnet Volt: 12 SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Supply pump- pressure : -0.10.3 " difference bar: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Supply pump- pressure : -1.11.5 ' difference bar: - Part-load del.at 3rd injqty. terza fermo della portata	Mounting and assembly dimensions: Designation K mm: 3.23.4 KF mm: 5.15.5 MS mm: 1.11.5 SVS max. mm: 2.9 Ya mm: 37.641.6 Yb mm: 49.963.3 Remarks: Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end Yb = Distance between VE flange and speed-control lever in rated speed position

On initial measurement, screw in residual-quantity adjusting screw 2 mm.

Following pump adjustment, screw out residual-quantity adjusting screw 2 mm.

Z = Absolute delivery

Note inst. in remarks column

Test scheet Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/9F2350R309-4 Type number : 0 460 494 325

Customer Part-No. :

Customer-specific information Customer : RENAULT

Engine : J8S - 600 CA

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Opening

Pressure bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1125

Setting value mm: 2.60...3.00

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1125

Setting value bar: 4.20...4.80

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1125

Del. quantity cm3/

1000s.: 36.20...37.20

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0)

Low-idle speed regulation

1/min: 425 Speed

Del. quantity cm3/

10003.: 13.00...17.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2.5)

Residual-Delivery Setting

1/min: 550 Speed

Del. quantity cm3/

1909s.: 4.00...8.09

Shutoff

electromagnet Volt: 12

Full-load speed regulation

1/min: 2500 Speed

Del. quantity cm3/

1000s.: 20.00...26.00

Shutoff

electromagnet Volt: 12

Start:

1/min: 100 Speed

Del. quantity cm3/: 52.00...92.00 mind 1000s.: 52.00

mind

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1125

Inj.-qty. cm3/

difference 1000s.: -11.0...-15.0 #

Shutoff

electromagnet Volt: 12 TD-travel dif.measurement

correttore anticipo iniezione (SV)

1.Speed 1/min: 1125

1/min: 2750 2nd speed mm: -0.5...-0.7 # difference Shutoff Shutoff electromagnet Volt: 12 electromagnet Volt: 12 Del. quantity cm3/: 0.00...5.00 1000s.: (0.00...5.00) 1/min: 2650 Inspection-pump test specifications 3rd speed Test specifications in parentheses Shutoff Timing-device characteristic: 1/min: 2000 mm: 7.10...7.90 mm: (6.80...8.20) 2nd speed TD travel Shutoff electromagnet Volt: 12 Del. quantity cm3/: 20.00...26.00 Shutoff electromagnet Volt: 12 3rd speed 1/min: 1125 1000s.: (19.00...27.00) 9th speed 1/min: 2250 TD travel mm: 2.60...3.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.20...37.20 1000s.: (33.90...38.50) mm: (2.10...3.50) Shutoff electromagnet Valt: 12 1/min: 800 4th speed 1/min: 1750 10th speed mm: 0.70...1.50 TD travel Shutoff mm: (0.40...1.80) electromagnet Volt: 12 Del. quantity cm3/: 34.90...36.90 Shutoff 1000s.: (33.60...38.20) 1/min: 1125 electromagnet Volc: 12 12th speed Supply-pump pressure characteristic: Shutoff electromagnet Volt: 12
Del. quyntity cm3/: 36.20...37.20
1000s.: (34.40...39.00) 1st speed 1/min: 800 Supply-pump bar: 3.10...3.70 pressure 1/min: 800 20th speed Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 33.70...36.70 1000s.: (32.90...37.50) electromagnet Volt: 12 2nd speed 1/min: 1125 Supply-pump bar: 4.20...4.80 pressure Shutoff Mech. shutoff: electromagnet Volt: 12 1/min: 2000 3rd speed Electr. shutoff: Supply-pump bar: 6.50...7.10 pressure 1st speed 1/min: 425 Del. quantity cm3/: 0.00...3.00 Shutoff electromagnet Volt: 12 1000s.: (0.00...3.00) Shutoff Overlow quantity at overflow valve: electromagnet volt: -1/min: 800 1st speed Damper set qty.: Shutoff electromagnet Volt: 12 LFG-setting: : 41.70...86.10 Overflow solidale con carcassa: quantity cm3/10s: (26.70...101.10) Idle delivery: 2nd speed 1/min: 2250 Shutoff 1/min: 425 1st speed electromagnet Volt: 12 Shutoff : 55.60...139.00 Overflow electromagnet Volt: 12 Del. quantity cm3/: 13.00...17.00 1000s.: (11.00...19.00) cm3/10s: (40.60...154.00) quantity Delivery-quant. and breakaway char.: High Idle:

TD-travel

1st speed 1/mi: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 8.50...12.50 1000s.: (6.50...14.50) Residual: 1/min: 550 1.Rotacao Shutoff electromagnet Volt: 12 Del. quantity cm3/: 4.00...8.00 1000s.: (4.00...8.00) Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1125 1st speed Inj.-qty. cm3/: -10.0..-12.0" difference 1000s .: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1125 Inj.-qty. cm3/: +2.0..+8.0 'Z difference 1000s.: -TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1125 TD-travel : -1.0..-1.60 ' difference mn: -Shutoff electromagnet Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1125 Supply pumppressure : -0.10..-0.30" difference bar: -Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1st speed 1/min: 210 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 45.00...85.00 1000s.: (45.00...85.00) 2nd speed 1/min: 310 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 25.00...45.00 1000s.: (25.00...45.00) 4th speed 1/min: 100 Shutoff

Del. quantity cm3/: 52.00...92.00 1000S.: (52.00...92.00) Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Remarks:

Yb

Ya = Distance between VE flange and speed-control lever in idle position Measurement point = edge of control lever on drive end

mm: 45.1...54.9

Yb = Distance between VE flange and speed-control lever in rated speed position Measurement point = edge of control lever on distributor-head end

On initial measurement, screw in residual-quantity adjusting screw 1 mm.

Screw out residual-quantity adjusting screw 1 mm after setting pump.

Z = Absolute delivery

electromagnet Volt: 12

Note inst. in remarks column

Test scheet Edition : 03.94

replaces

Calibrating oil : ISO-4113

: VE4/9F2250R513 Injection pump : 0 460 494 341 Type number

Customer Part-No. :

Customer-specific information

Customer : PSA

: XUD 9 TF-Y Engine

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil °C return temp.

with thermometer : 40.00...48.00 : 42.00...50.00 Electronically

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 022

Opening |

bar: 130.00...133.00 Pressure

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length

Start of delivery mm: -Prestroke (from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Speed Charge press. hPa: 1000 Setting value mm: 3.40...3.80

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1250 Charge press hea: 1000

Setting value bar: 5.60...6.20

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1250 Charge press. hPa: 1000

Del. quantity cm3/

1000s.: 53.50...54.50

Shutoff

electromagnet Volt: 12 cm3/: 2.0 Dispersion 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 500 Del. quantity cm3/

1000s.: 36.50...37.50

Shutoff

electromagner Volt: 12

Low-idle speed regulation

1/min: 400 Speed

Del. quantity cm3/

1000s.: 12.00...14.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0)

Residual-Delivery Setting

1/min: 500 Speed

Del. quantity cm3/

1000s.: 6.00...7.00

Shutoff

electromagnet Volt: 12

Full-load speed regulation

1/min: 2575 Speed Charge press hPa: 1000

Del. quantity cm3/

1000s.: 12.00...16.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 150 Del. quantity cm3/: 37.00...67.00

1000s.: 37.00 mind

Shutoff

electromagnet Volt: 12

N21

Shutoff Load-dependent start of delivery: electromagnet Volt: 12 Inj.-uty.dif.measurement: Overlow quantity at overflow valve: 1/min: 1250 Speed Inj.-aty. cm3/ difference 1000s.: -11.0...-15.0 # 1st speed 1/min: 500 Charge press. hPa: 1000 Shutoff Shutoff electromagnet Volt: 12 TD-travel dif.measurement electromagnet Volt: 12 : 41.70...83.40 Overflow correttore anticipo iniezione (SV) 1.Speed 1/min: 1250 quantity cm3/10s: (26.70...98.40) 2nd speed 1/min: 2150 TD-travel Charge press. hPa: 1000 Shutoff difference mm: -0.9...-1.1 # Shutoff electromagnet Volt: 12 Overflow : 55.60...139.00 electromagnet Volt: 12 quantity cm3/10s: (40.60...154.00) Inspection-pump test specifications Test specifications in parentheses Delivery-quant. and breakaway char.: Timing-device characteristic: 1/min: 750 1nd speed 2nd speed 1/min: 2000 Charge-air pressure-setting hPa: 1000 hPa: 350 Charge press point mm: 6.10...6.90 mm: (5.80...7.20) TD travel mm: 5.9 LDA-stroke Shutoff electromagnet Volt: 12
Del. quantity cm3/: 46.00...47.00
1000S.: (43.50...49.50)
2nd speed 1/min: 2750 Shutoff electromagnet Volt: 12
3rd speed 1/min: 1250
Charge press hPa: 1000
TD travel mm: 3.40...3.80 Charge press. hPa: 1000 Shutoff mm: (2.90...4.30) electromagnet Volt: 12 Del. quantity cm3/: 0.00...6.00 1000S.: (0.00...6.00) Shutoff electromagnet Volt: 12 4th speed 1/min: 750 Charge press hPa: 1000 1/min: 2575 5th speed Charge press. hPa: 1000 Shutoff TD travel mm: 1.10...1.90 mm: (0.80...2.20) Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Charge press. hPa: 1000 1st speed 1/min: 750 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 33.00...43.00 1000s.: (32.00...44.00) Charge press. hPa: 1000 Supply-pump bar: 4.40...5.00 pressure Shutoff 1/min: 2150 9th speed electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: 1000 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 49.50...51.50
1000S.: (48.30...52.70)
10th speed 1/min: 2000 Charge press. hPa: 1000 Supply-pump pressure bar: 5.60...6.20 Shutoff electromagnet Volt: 12 3rd speed 1/min: 2000 Charge press. hPa: 1000 Charge press. hPa: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 51.00...53.00 1000s.: (49.80...54.20) Supply-pump bar: 7.30...7.90 pressure 12th speed 1/min: 1250

Charge press. hPa: Shutoff electromagnet Volt:	12	† †	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.007.00
Del. quyntity cm3/: 1000s.:	53.50 54.50 (51.8056.20)	+	1000s.: (4.508.50)
18th speed 1/min: Charge press. hPa: Shutoff		+	Load-dependent start of delivery: Injqty.dif.measurement:
	37.5038.50 (35.0041.00)	<u>+</u> +	1st speed
20th speed 1/min: Charge press. hPa: Shutoff	1000	 	Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250
electromagnet Volt: Del. quantity cm3/: 1000s.:	12 46.5049.50 (45.0051.00)	+++++++++++++++++++++++++++++++++++++++	Injqty. cm3/: +0.2+8.0 Z' difference 1000S.: - Shutoff
Mech. shutoff: Mech. Abstellung:		Ī	electromagnet Volt: 12 TD-travel dif.measurement:
1st speed 1/min: Charge press. hPa: Del. quantity cm3/:	1000	<u> </u>	correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel : -2.12.5 '
1000s.: Shutoff	(0.003.00)	Ī	difference mm: - Shutoff electromagnet Volt: 12
electromagnet volt:	12	‡	SP pressdif.measurement:
Electr. shutoff:		‡	pompa di mandata (FP): 1st speed 1/min: 1250
1st speed 1/min: Del. quantity cm3/:	0.003.00	+	Supply pump- pressure : -0.10.3 "
Shutoff electromagnet volt:	(0.00.	Ī	difference bar: - Shutoff electromagnet Volt: 12
Damper set qty.:		-	2nd speed 1/min: 1250 Supply pump-
LFG-setting: solidate con carcass	sa:	+	pressure : -0.91.3 ' difference bar: - Shutoff
Idle delivery:		‡	electromagnet Volt: 12
1st speed 1/min: Shutoff electromagnet Volt:		<u>†</u>	Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set)
Del. quantity cm3/:		+	scarico) (ARF) gaz d'échappement-ARF)
High Idle:		Ŧ	Spacing mm: 12.0
1st speed 1/mi: Shutoff		‡	1st speed 1/min: 1250 Charge press. hPa: 1000 Shutoff
electromagnet Volt: Del. quantity cm3/: 1000s.:		+++++++++++++++++++++++++++++++++++++++	electromagnet Volt: 12 Del. quantity cm3/: 16.8018.80 1000S.: (13.8021.80)
Residual:		I	Automatic starting fuel delivery:
1.Rotacao 1/min:	500	‡	2nd speed 1/min: 380

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 25.00...45.00 1000s.: (25.00...45.00)

1/min: 200 3rd speed

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 50.00...56.00 1000s.: (45.50...60.50)

1/min: 150 4th speed

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 37.00...67.00 1000s.: (37.00...67.00)

Shutoff electromagnet:

Cut-in

: 10.0 min voltage : 12.0 Rated voltage

Mounting and assembly dimensions:

Designation.

mm: 3.2...3.4 KF mm: KOT

mm: 1.1...1.5 mm: 5.9 MS

LDA stroke

mm: 28.8...32.8 Ya Yb mm: 67.0...81.0

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position

Measurement point = edge of control

lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position

Measurement point = edge of control lever on distributor-head end

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.

Permissible port/port scatter with stop test, mechanical = max. 5.0 ccm/1000 S.

Note inst. in remarks column

Test scheet : VWW Edition : 03.94

replaces

Calibrating oil : ISO-4113

Injection pump : VE4/9F2300R433-2 Type number : 0 460 494 346

Customer Part-No. :

Customer-specific information

Customer

Engine : 1,9 L UD A3

TEST BENCH REQUIREMENTS

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly : 1 688 901 000

Opening

Pressure bar: 147.00...150.00

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Speed Charge press. hPas 750

Setting value mmt 4.30...4.50

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250 Speed Charge press hPa: 750

Setting value bar: 5.40...6.00

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1250 Speed Charge press. hPa: 750

Del. quantity cm3/ 1000s.: 50.00...51.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 450

Del. quantity cm3/

1000s.: 37.20...43.20

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

Speed 1/min: 450

Del. quantity cm3/

1000s.: 16.00...18.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0

Residual-Delivery Setting

Speed 1/min: 550

Del. quantity cm3/

1000s.: 7.00...8.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.01000s.: (3.0)

Full-load speed regulation

Speed 1/min: 2600 hPa: 750 Charge press

Del. quantity cm3/ 1000s.: 9.00...13.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 37.00...43.00 mind 1000s.: 37.0

Shutoff

electromagnet Volt: 12

Shutoff Load-dependent start of delivery: electromagnet Volt: 12 Inj.-qty.dif.measurement: Overlow quantity at overflow valve: Speed 1/min: 1250 ist speed 1/min: 700 Charge press. hPa: 750 Shutoff Inj.-qty. cm3/ difference 1000S.: -8.0...-12.0 # Shutoff electromagnet Volt: 12 TD-travel dif.measurement electromagnet Volt: 12 : 41.70...83.40 Overflow correttore anticipo iniezione (SV) 1.Speed 1/min: 1250 quantity cm3/10s: (26.70...98.30) 2nd speed 1/min: 2100 TD-travel Charge press. hPa: 750 difference mm: -0.5...-0.7 # Shutoff Shutoff electromagnet Volt: 12 Overflow : 55.60...152.90 electromagnet Volt: 12 quantity cm3/10s: (40.60...167.90) Inspection pump test specifications Test specifications in parentheses Delivery-quant. and breakaway char.: Timing device characteristic: 1/min: 2750 2nd speed Charge press. hPa: 750 Shutoff 2nd speed 1/min: 2100 Charge press hPa: 750 electromagnet Volt: 12
Del. quantity cm3/: 0.00...3.00
1000S.: (0.00...3.00)
5th speed 1/min: 2600
Charge press. hPa: 750
Shutoff mm: 8.00...8.60 TD travel mi: (7.50...9.10) Shutoff electromagnet Volt: 12 3rd speed 1/min: 1250 Charge press hPa: 750 TD travel mm: 4.30...4.50 mm: (3.60...5.20) Shutoff electromagnet Volt: 12
4th speed 1/min: 750
Charge press hPa: 750 10 travel mm: 1.50...2.10 electromagnet Volt: 12 Del. quantity cm3/: 32.50...42.50 mm: (1.00...2.60) 1000s.: (31.50...43.50) 1/min: 2100 Shutoff electromagnet Volt: 12 9th speed Charge press. hPa: 750 Supply-pump pressure characteristic: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 42.00...44.00 1000S.: (40.80...45.20) 1st speed 1/min: 750 Charge press. hPa: 750 Supply-pump 1/min: 1250 12th speed pressure bar: 4.30...4.90 Charge press. hPa: 750 Shutoff Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 electromagnet Volt: 12 Del. quyntity cm3/: 50.00...51.00 Charge press. hPa: 750 1000s.: (48.30...52.70) cuth speed 1/min: 700 Charge press. hPa: 750 Shutoff Supply-pump pressure bar: 5.40...6.00 Shutoff electromagnet Volt: 12 3rd speed 1/min: 2100 electromagnet Volt: 12 Del. quantity cm3/: 43.50...46.50 Charge press. hPa: 750 1000s.: (42.80...47.20) Supply-pump 1/min: 450 21th speed

Charge press. hPa: -

pressure

bar: 7.40...8.00

Shutoff TD-travel : -0.8...1.2 ' electromagnet Volt: 12 Del. quantity cm3/: 37.20...43.20 difference mm: (-0.4...-1.6)Shutoff 1000s.: (34.70...45.70) electromagnet Volt: 12 Mech. shutoff: SP press.-dif.measurement: pompa di mandata (FP): Electr. shutoff: 1st speed 1/min: 1250 Supply pump-1/min: 450 pressure 1st speed : -0.1...-0.3 " Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) difference bar: -Shutoff Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 electromagnet volt: -2nd speed Supply pump-Damper set qty.: : -0.3...-0.7 ' pressure bar: difference LFG-setting: Shutoff solidale con carcassa: electromagnet Volt: 12 Idle delivery: Part-load del.at 3rd inj.-qty. terza fermo della portata stop (EGR set) 1/min: 450 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.00...18.00 1000s.: (13.00...21.00) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0 High Idle: 1st speed 1/min: 1000 Charge press. hPa: 750 Shutoff 1/mi: 550 1st speed electromagnet Volt: 12 Del. quantity cm3/: 34.00...36.00 1000s.: (32.00...38.00) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.00...18.00 1000s.: (13.00...21.00) Automatic starting fuel delivery: Residual: 1/min: 180 1st speed 1/min: 550 1.Rotacao Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...55.00 1000s.: (35.00...55.00) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.00...8.00 1000s.: (5.50...9.50) 1/min: 380 2nd speed Load-dependent start of delivery: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 31.00...51.00 1000s.: (31.00...51.00) Inj.-qty.dif.measurement: 1st speed 1/min: 1250 Inj.—aty. cm3/ : -7.0...-9.0 " difference 1000s.: -3rd speed 1/min: 100 Shutoff Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 electromagnet Volt: 12 Del. quantity cm3/: 37.00...43.00 cm3/: 0.0...+3.0 Z' Inj.-qty. 1000s.: (32.50...47.50) difference 1000s .: -Shutoff Shutoff electromagnet: electromagnet Volt: 12 Cut-in TD-travel dif.measurement: min voltage : 10.0 correttore anticipo iniezione (SV): Rated voltage : 12.0 1st speed 1/min: 1250

Mounting and assembly dimensions:

Designation

K		mm:	3.63.8
KF		mm:	KOT
MS		mm:	1.11.5
LDA	stroke	mm:	-
XK		mm:	LP=0.83.0
Ya		mm:	37.641.6
Yb		mn:	50.463.3

Remarks:

Ya = Distance between VE flange and speed-control lever in idle position
Measurement point = edge of control lever on drive end

Yb = Distance between VE flange and speed-control lever in rated speed position
Measurement point = edge of control lever on distributor-head end

Z = Absolute delivery

Pump in stepped LDA

Permissible port/port scatter with stop test, electrical = max. 5.0 ccm/1000 S.